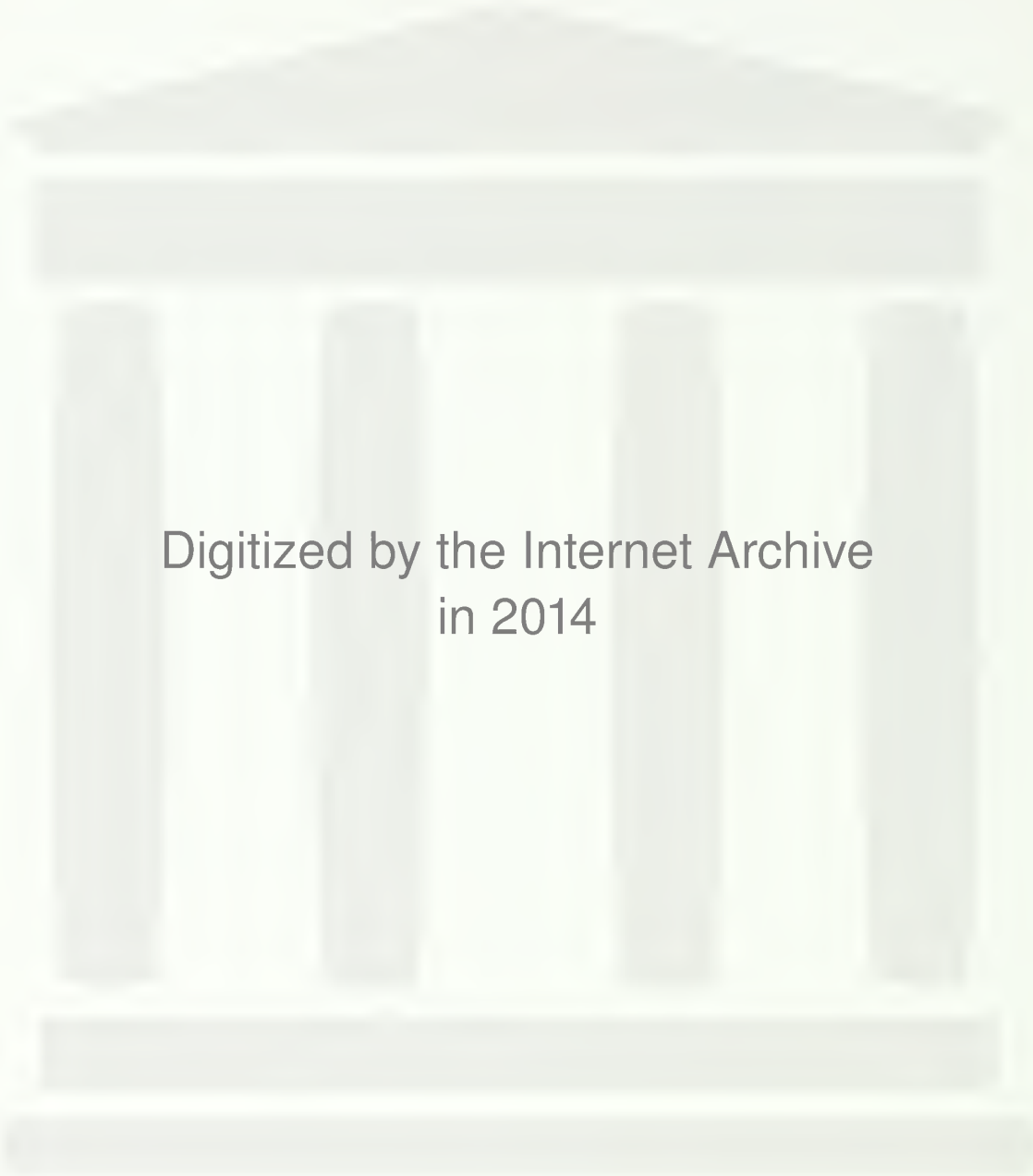
UMASS/AMHERST
312066 0285 2621 1


Digitized by the Internet Archive
in 2014

https://archive.org/details/selectedacquisit9939stat

MASS. STL1.3: 993/1 v
1993-1994
15/white

SELECTED ACQUISITIONS

JANUARY - FEBRUARY - 1993

GOVERNMENT DOCUMENTS COLLECTION
APR 28 1993
University of Massachusetts
Depository Copy

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000
FAX: (617) 973-7153

Toby Pearlstein
Chief Librarian & Archivist
Natalie Ridge
Technical Services Librarian
George Sanborn
Reference Librarian
Lynn Matis
Law Librarian
Irene Guthrie
Secretary

LIBRARY BULLETIN BOARD

On a regular basis the Library receives "Hot Topics", bibliographies produced by the Transportation Research Information Service of the Transportation Research Board. Below is a listing of those received during March/April 1993.

ACCELERATED PAVEMENT TESTING (3/93)
ARCHITECTURE AND ENGINEERING PROCUREMENT (3/93)
CENTRALIZED DISPATCHING (4/93)
CONSTRUCTION MANAGEMENT (4/93)
CROSS VIEW MIRRORS – BLIND AREAS (4/93)
DESIGN-BUILD OR TURNKEY PROJECTS (4/93)
EFFECTIVENESS OF EMERGENCY LIGHTS OR SIRENS (3/93)
EFFECTIVENESS OF PAVEMENT MARKINGS (3/93)
FOREST OR PARK ROADS DESIGN AND MAINTENANCE (3/93)
GEOGRAPHIC INFORMATION SYSTEMS (4/93)
GEOSYNTHETICS AND REFLECTIVE CRACKING (4/93)
INTERLOCKING DEVICE TO COMBAT DRUNK DRIVING (3/93)
LEFT TURN PHASING (3/93)
LOTTMAN TEST OR RETAINED RATIOS (3/93)
MAINTENANCE MANAGEMENT (4/93)
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES MUTCD (3/93)
MISUSE OF CHILD RESTRAINTS OR SAFETY SEATS (3/93)
MOISTURE DAMAGE ON ASPHALT MIXTURES (3/93)
PAVEMENT GROOVING FOR SAFETY OR DRAINAGE (3/93)
PAVEMENT MANAGEMENT (4/93)
PAVEMENT OVERLAY COMPUTER SOFTWARE (4/93)
PAVEMENT PATCHING (3/93)
PAVEMENT PERFORMANCE (4/93)
PAVEMENT RUTTING (3/93)
POLYMER MODIFIED ASPHALT (3/93)
PROCUREMENT PRACTICES (4/93)
SILICA FUMES, FLY ASH AND POZZOLANS (3/93)
STATISTICAL ACCEPTANCE (4/93)
SUBBASE STABILIZATION 1985-1992 (3/93)
VALUE ENGINEERING 1988-1993 (3/93)
WETLAND MITIGATION (4/93)

The Library has also received a set of Papers presented at the 1993 Transportation Research Board Annual Conference. Papers are indexed by Title, Author, Paper Number, and Publication Category and cover a wide variety of topics in all modes of transportation. Papers may be borrowed or photocopied.



SELECTED ARTICLES FROM LEGAL PERIODICALS

ABC'S OF ENVIRONMENTAL MANAGEMENT by John Sabatino, *ENVIRONMENTAL WASTE MANAGEMENT,* Jul/Aug 1992, p.14-16.

ABC'S OF ENVIRONMENTAL MANAGEMENT TRAINING, INSPECTIONS AND AUDITS by John Sabatino, *ENVIRONMENTAL WASTE MANAGEMENT,* Nov/Dec 1992, p.22-23.

COMPLYING WITH HAZWOPER-A COMPLEX ASSIGNMENT by Bryant J. Gallant, *ENVIRONMENTAL WASTE MANAGEMENT,* Sept\Oct 1992, p.9-10.

DISCOVERING AND PRESERVING EVIDENCE IN AVIATION CASES by Mark H. Goodrich, *TRIAL,* February 1993, p.40-44.

EMPLOYING AND ACCOMMODATING WORKERS WITH DISABILITIES:MANDATES AND GUIDELINES FOR LABOR RELATIONS by Jeffrey A. Mello. *LABOR LAW JOURNAL,* March 1993, p.162-170.

ENVIRONMENTAL REGULATION IN MICHIGAN AND MASSACHUSETTS:TWO STATES WITH TWO DIFFERENT SOLUTIONS TO THE SAME PROBLEM by Diane Dianelson, *BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW,* V.20 No.1, p.99-133.

MANAGING WORK-FORCE DIVERSITY IN THE NINETIES; THE IMPACT OF THE CIVIL RIGHTS ACT OF 1991 by James H. Coil 111 and Charles M. Rice, *EMPLOYEE RELATIONS LAW JOURNAL,* Spring 1993, p.547-567.

OBSTACLES TO INCREASING AIRSPACE: JUMPING THROUGH ENVIRONMENTAL LAW HOOPS by Tom Neuhoff, Jr., *THE JOURNAL OF AIR LAW AND COMMERCE,* Fall 1992, p.221-266.

PHOTOREALISTIC COMPUTER GRAPHICS by Roy W. Krieger, *TRIAL,* February 1993, p.46-49.

RAILROAD WELDERS, LUNG DISEASE, AND THE FELA by William Gavin, *TRIAL,* February 1993, p.50-55.

RECENT DEVELOPMENTS IN AVIATION CASE LAW by Jonathan M. Hoffman and Philip S. Harris, *THE JOURNAL OF AIR LAW AND COMMERCE,* Fall 1992, p.1-102.

REBUILDING THE CITY OF RICHMOND; CONGRESS'S POWER TO AUTHORIZE THE STATES TO IMPLEMENT RACE-CONSCIOUS AFFIRMATIVE ACTION PLANS, *BOSTON COLLEGE LAW REVIEW,* Sept 1992, p.904-980.

REINSTATEMENT OF THE SEXUAL HARASSER: THE CONFLICT BETWEEN FEDERAL LABOR LAW AND TITLE V11 by Thomas J. Pislorski, *EMPLOYEE* RELATIONS LAW JOURNAL, Spring 1993, p.617-624.

SEAT BELT LITIGATION by James L.Gilbert,Donald H. Slavik, and Larry E. Cohen, *TRIAL,* February 1993, p.18-24.

SELECTED ARTICLES FROM LEGAL PERIODICALS (Continued)

SUMMER TO SUMMER: RECENT GOVERNMENT CONTRACTS CASES BEFORE THE UNITED STATES CLAIMS COURT by Eric Lipman and James M. Read, *PUBLIC CONTRACT LAW JOURNAL,* Fall 1992, p. 1-54.

SOIL CLEANUP: COMPARING TREATMENT TECHNOLOGIES by Nancy Gilbertson, *ENVIRONMENTAL WASTE MANAGEMENT,* Jul/Aug 1992, p.29-32.

STATE REGULATIONS OF HAZARDOUS MATERIALS CARRIERS & SHIPPERS, by Stephen L. Hermann, *ENVIRONMENTAL WASTE MANAGEMENT,* Nov/Dec 1992, p.8-11.

THE BURDEN OF PROOF IN GOVERNMENT CONTRACT SCHEDULE DELAY CLAIMS by Michael R. Finke, *PUBLIC CONTRACT LAW JOURNAL,* Fall 1992, p,1-54.

THE CIVIL RIGHTS ACT OF 1991: CONTINUING VIOLATION AND THE RETROACTIVITY CONTROVERSY by Frederick L. Douglas, *LABOR LAW JOURNAL,* March 1993, p.153-161.

TRUCK UNDERRIDE TRAGEDIES by Byron Bloch and Elliot G. Wolfe, *TRIAL,* February 1993, p.32039.

WHEN ROAD KILLS, WHO IS LIABLE? by Richard S. Kuhlman, *TRIAL,* February 1983, p.26-30.

TO ORDER A COPY OF AN ARTICLE(S) YOU MAY COMPLETE THE REQUEST FORM AT THE END OF THIS BOOKLET BY LISTING THE TITLE OF THE ARTICLE(S) AND THE NAME OF THE JOURNAL(S).



AIR QUALITY MANAGEMENT.

TD
886.5
.U54
T72
1992

The 1992 transportation & air quality planning guidelines. -- [Ann Arbor, MI] : U. S. Environmental Protection Agency, [1992]
1 v. (various pagings) : ill. ; 28 cm.

1. Air quality management. 2. Transportation--Law and legislation--United States. 3. Automobiles--Motors--Exhaust gas--Law and legislation--United States.

19 FEB 93 26734406 TLBAsc

ALUMINUM CONSTRUCTION.

TA
690
.S52
B43
1993

Sharp, Maurice L.
Behavior and design of aluminum structures / Maurice L. Sharp. -- New York : McGraw-Hill, c1993.
xi, 309 p. : ill. ; 24 cm.
ISBN 0-07-056478-7

1. Aluminum construction. 2. Structural design.

25 JAN 93 26128525 TLBAsc 92-22257

AUTOMOBILES--UNITED STATES--COSTS.

HD
9710
.U52
U45
1992

United States. General Accounting Office.
Motor vehicle regulations : regulatory cost estimates could be improved : report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
44 p. ; 28 cm.

11 FEB 93 26480676 TLBAsc SEE NEXT CRD

BRIDGES--MAINTENANCE AND REPAIR.

HE
131
.T687r
no.1347

Maintenance of highway structures. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
v, 87 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1347)
ISBN 0-309-05213-0

1. Bridges--Maintenance and repair.

11 FEB 93 26362228 TLBAsc 92-23519

CHICAGO TRANSIT AUTHORITY--ADMINISTRATION.

Oversize
HE
4491
.C4
C53
1992

Cherry, David Henry.
When private went public / by David Henry Cherry. -- 1992.
viii, 232 leaves ; 29 cm.

1. Chicago Transit Authority--History. 2. Chicago Transit Authority--Privatization. 3. Chicago Transit Authority--Administration. 4. Chicago Transit Authority--Management. 5. Local transit--Illinois--Chicago.

15 JAN 93 27141706 TLBAsc

CO-DEPENDENCE (PSYCHOLOGY)

A-V
BC
569.5
.C63
B422
1989

Beattie, Melody.
Beyond codependency [sound recording : getting better all the time] / Melody Beattie. -- Minneapolis, MN : Hazelden, 1989.
1 sound cassette (60 min.) : analog, 1 7/8 ips. -- (Hazelden Sound Recovery Series)

1. Self-care, Health. 2. Substance abuse--Patients--Family relationships. 3. Co-dependence (Psychology)

29 JAN 93 20367612 TLBAsc

CO-DEPENDENCE (PSYCHOLOGY)

A-V
BF
575
.D34
B42
1990

Beattie, Melody.
The language of letting go [sound recording] / Melody Beattie. -- Plymouth, MN : Metacom, Inc., 1990.
1 sound cassette (ca. 60 min.) : 1 7/8 ips. -- (Hazelden audio cassette library)
Metacom, Inc.: HL 215.
ISBN 0-88676-344-4

1. Co-dependence (Psychology) 2. Co-dependence (Psychology)--Prayer--books and devotions. 3. Self-care, Health.

29 JAN 93 22611980 TLBAsc

COMMUTERS--TAXATION--UNITED STATES--EVALUATION.

HE
4461
.U54
M37
1992

United States. General Accounting Office.
Mass transit : effects of tax changes on commuter behavior : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
30 p. ; 28 cm.
1. Employee fringe benefits--Taxation--Law and legislation--United States--Evaluation. 2. Commuters--Taxation--United States--Evaluation. 3. Employer-sponsored transportation--Taxation--United States--Evaluation. 4. Local transit--United States--Ridership.

19 FEB 93 26820485 TLBAsc

COMMUTING--UNITED STATES.

HE
371
.R67
R48
1992

Rosenbloom, Sandra.
Reverse commute transportation : emerging provider roles / [Sandra Rosenbloom]. -- Tucson, Ariz. : The Drachman Institute ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
iv, 67, A40, B10 p. ; 28 cm.
STRN: FTA-TX-11-0021-92-1

1. Commuting--United States. 2. Commuters--United States. 3. Suburbs--United States. 4. Employer-sponsored transportation--United States.

19 JAN 93 26972201 TLBAsc

COMPUTER SOFTWARE INDUSTRY--MASSACHUSETTS--DIRECTORIES.

REF.
HD
9696
.C63
M4

The complete guide to the Massachusetts software industry. -- Boston, MA. : Massachusetts Computer Software Council,
v. : ill. ; 28 cm.
LATEST YEAR ONLY

1. Computer software industry--Massachusetts--Directories.

19 JAN 93 23194824 TLBAsc SN92-22192

ELECTRIC RAILROADS--CARS--MAINTENANCE AND REPAIR.

TF
924
.J48
C66
1992

Jewell, Marta.
Construction costs and operating characteristics of vintage trolleys : final report / prepared by Marta Jewell (KPMG Peat Marwick). -- Washington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1992]
1 v. (various pagings) : ill. ; 28 cm.
1. Street-railroads--Conservation and restoration--Costs. 2. Electric railroads--Cars--Costs. 3. Electric railroads--Finance. 4. Electric railroads--Cars--Maintenance and repair.

19 JAN 93 27165021 TLBAsc

EMPLOYMENT INTERVIEWING.

A-V
HF
5549.5
.16
P68
1990

Power interviewing [videorecording] / written & produced by Patrick J. Atkinson ; directed by Darren T. Gould. -- [St. Charles, Ill.] : Waterford Production Group, c1990.
1 videocassette (52 min.) : sd., col. ; 1/2 in.

1. Employment interviewing. 2. Job hunting. 3. Resumes (Employment)

05 FEB 93 23476149 TLBAsc

ENERGY POLICY--UNITED STATES.

KF
27
.P8966
1992

United States. Congress. House. Committee on Public Works and Transportation. Subcommittee on Surface Transportation.
Comprehensive National Energy Policy Act of 1992 (surface transportation issues) : hearing before the Subcommittee on Surface Transportation of the Committee on Public Works and Transportation, House of Representatives, One Hundred Second Congress, second session, April 9, 1992. -- Washington : U.S. G.P.O. : [Supt. of Docs., Congressional Sales Office, distributor], 1992.
xii, 168 p. : ill. ; 24 cm.
ISBN 0-16-0 38953-4

19 FEB 93 26938232 TLBAsc SEE NEXT CRD

ENGLISH PHILOLOGY--DICTIONARIES.

REF.
PE
31
.093
1992

The Oxford companion to the English language / editor, Tom McArthur ; managing editor, Feri McArthur. -- Oxford, [Eng.] ; New York : Oxford University Press, 1992.
xxvii, 1184 p. : ill. ; 24 cm.
ISBN 0-19-214183-X

1. English philology--Dictionaries.

11 JAN 93 26441531 TLBAsc

FRINGE PARKING--TEXAS--FORECASTING.

TL
175.5
.T4
N86
1987

Nungesser, Lisa G.
Procedures for estimating park-and-ride demand in large Texas cities / by Lisa G. Nungesser and Nancy P. Ledbetter ; sponsored by State Department of Highways and Public Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; Springfield, Va. : Available from the National Technical Information Service, [1987]
xxiii, 79 p. : ill., maps ; 28 cm. -- (Research report ; 339-7)
STRN: FHWA/ TX-87/24+339/7

05 JAN 93 15352130 TLBAsc SEE NEXT CRD

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.S3
C87
1991

Schweiger, Carol L.
Current uses of geographic information systems in transit planning : final report / prepared by Carol L. Schweiger (EG&G Dynatrend Inc.). -- Washington, D.C. : Urban Mass Transportation Administration, Office of Grants Management : Distributed in cooperation with Technology Sharing Program, [1991]
iii, 77 p. : charts ; 28 cm.

1. Local transit--Planning. 2. Geographic information systems.

19 JAN 93 26092404 TLBAsc

HIGHWAY COMMUNICATIONS--UNITED STATES--TECHNOLOGICAL INNOVATIONS.

TE
228.3
.I57
S77
1992

Intelligent Vehicle Highway Society of America.
Strategic plan for intelligent vehicle-highway systems in the United States / prepared by IVHS America. -- Washington, D.C. : Intelligent Vehicle Highway Society of America, c1992.
290 p. in various pagings : ill. ; 28 cm.
STRN: IVHS-AMER-92-3

1. Automobiles--Automatic control. 2. Highway communications--United States--Technological innovations.

19 JAN 93 26150210 TLBAsc

LOCAL TRANSIT--CONTRACTING OUT--HANDBOOKS, MANUALS, ETC.

HE
4351.2
.M39
M36
1992

Maze, T. H.
Manual on contracting for vehicle maintenance services / prepared by T.H. Maze and Kathleen Waggoner. -- Washington, D.C. : Federal Transit Administration, Office of Technical Assistance and Safety ; Springfield, VA : Available through the National Technical Information Service, [1992]
x, 237 p. ; 28 cm.
STRN: FTA-IA-0008-92-1
1. Local transit--Contracting out--Handbooks, manuals, etc. 2. Local transit--Management--Handbooks, manuals, etc. 3. Motor vehicles--Maintenance and repair--Management. 4. Buses--Maintenance and repair--Management.

11 FEB 93 27311204 TLBAsc

LOCAL TRANSIT--ENGLAND--LONDON.

HE
4719
.L66
V52
1969

The Victoria Line : a pictorial record, published on the occasion of the opening of the Line by Her Majesty the Queen / London Transport. -- London : London Transport Board, 1969.
47 p. : ill. (some col.), maps ; 24 x 32 cm.

1. Local transit--England--London. 2. Subways--England--London.

18 FEB 93 10902345 TLBAsc

LOCAL TRANSIT--UNITED STATES--MAINTENANCE AND REPAIR.

HE
4451
.M62
1992

Modernization of the nation's rail transit systems : a status report / prepared by Gannett Fleming, Engineers and Planners ; in association with UTD Incorporated. -- [Washington, D.C.] : Federal Transit Administration, Office of Policy, [1992]
96 p. : ill. ; 28 cm.

1. Local transit--United States--Maintenance and repair. 2. Subways--United States--Maintenance and repair. 3. Street-railroads--United States--Maintenance and repair.

11 FEB 93 27308697 TLBAsc

LOTUS 1-2-3 (COMPUTER PROGRAM).

A-V
HF
5548.4
.L67
L67
1990

Lotus 1-2-3 spreadsheets functions [videorecording] / Morris Video. -- [Torrance, CA] : Morris Video, [c1990].
1 videocassette (30 min.) : sd., col. ; 1/2 in.
ISBN 1-55746-092-2

1. Electronic spreadsheets--Computer programs. 2. Lotus 1-2-3 (Computer program).

05 FEB 93 24958194 TLBAsc

LOW-CHOLESTEROL DIET--RECIPES.

RM
237.75
.F57
F57
1990

Fischer, Lynn.
The Fischer/Brown low cholesterol gourmet / by Lynn Fischer & W. Virgil Brown. -- New York : Avon Books, [1990], c1989.
xiv, 312 p. : ill. ; 21 cm.
ISBN 0-380-70850-7 (pbk.)

1. Low-cholesterol diet--Recipes.

18 FEB 93 22603530 TLBAsc

LOW-FAT DIET.

A-V
RM
237.7
.F37
1987

Fat stuff [videorecording] / presented and produced by WGBH Boston in association with American Health. -- Deerfield, IL : Distributed by MTI Film & Video, c1987.
1 videocassette (VHS) (30 min.) : sd., col.; 1/2 in. -- (Bodywatch ; 5233M)

1. Low-fat diet. 2. Arteriosclerosis--Nutritional aspects.

18 FEB 93 17526066 TLBAsc

LOW-FAT DIET--RECIPES.

RM
237.7
.B34
T37
1985

Bailey, Covert.
Target recipes / Covert Bailey, Lea Bishop. -- Boston : Houghton Mifflin, 1985.
168 p. : ill. ; 21 cm.
ISBN 0-395-37689-8 (pbk.)

1. Low-fat diet--Recipes.

29 JAN 93 11233885 TLBAsc 84-22365

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--FARES.

HE
4491
.B719
F338
1993

MBTA environmental impact report on the 1991 fare increase : supplemental draft / produced by the Massachusetts Bay Transportation Authority; contributing authors CTPS, Palmer & Dodge. -- [Boston, Mass.] : The Authority, 1993.
1 v. (various pagings) : ill., maps ; 28 cm.

1. Massachusetts Bay Transportation Authority--Fares. 2. Massachusetts Bay Transportation Authority--Impacts, Economic. 3. Massachusetts Bay Transportation Authority--Impacts, Social.

Rev-1 2-12-93 TLBAsc

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY.--PLANNING.

BE
4491
.B716
M382b
PMT

Commuting in a new century / Executive Office of Transportation and Construction ; in cooperation with the Massachusetts Bay Transportation Authority. -- [Boston, Mass.] : Executive Office of Transportation and Construction, 1991-
v. : ill. ; 28 cm.

1. Local transit--Massachusetts--Boston Metropolitan Area--Planning. 2. Transportation--Massachusetts--Boston Metropolitan Area--Planning. 3. Massachusetts Bay Transportation Authority.--Planning.

Rev-1 1-25-93 TLBAsc

MASSACHUSETTS STATE TRANSPORTATION BUILDING.

BI
177
.B7
S735
1992

State Transportation Building management proposal / RM Bradley. -- Boston, Mass. : R.M. Bradley, 1992.
141 leaves : 28 cm.

1. Massachusetts State Transportation Building.

Rev-1 1-4-93 TLBAsc

MENTORS IN BUSINESS.

A-V
HF
5386
.W66
M46
1992

Woodring, Susan Fowler.
Mentoring [sound recording] : how to foster your career's most crucial relationships / Susan Fowler Woodring. -- Boulder, CO : CareerTrack Publications, c1992.
2 sound cassettes (ca. 115 min.) : digital.
ISBN 1-55877-160-7

1. Mentors in business. 2. Mentors in the professions. 3. Success in business.

19 FEB 93 27246672 TLBAsc

MICROCOMPUTERS.

A-V
QA
76.5
.Y68
1990

Your first computer [videorecording] / Morris Media. -- Torrance, CA : Morris Video, c1990.
1 videocassette (30 min.) : sd., col. ; 1/2 in.
ISBN 1-55746-099-X

1. Microcomputers.

Rev-1 2-5-93 TLBAsc

MICROSOFT WINDOWS (COMPUTER FILE)

A-V
QA
76.76
.W56
167
1991

Introduction to windows 3.0 [videorecording]. -- Torrance, CA : Morris Media, 1991.
1 videocassette (40 min.) : sd., col. ; 1/2 in.
ISBN 1-55746-258-3

1. Windows (Computer programs) 2. Microsoft Windows (Computer file)

05 FEB 93 26206307 TLBAsc

MOHEGAN INDIANS--FICTION.

PS
1408
.A1
1983

Cooper, James Fenimore, 1789-1851.
The last of the Mohicans : a narrative of 1757 / James Fenimore Cooper. -- New York : Quality Paperback Book Club, 1983.
476 p. ; 21 cm.

1. Mohegan Indians--Fiction. 2. United States--History--French and Indian War, 1755-1763--Fiction.

29 JAN 93 27301235 TLBAsc

PAVEMENTS, CONCRETE--MAINTENANCE AND REPAIR.

TE
220.5
.H67
B92
1991

Hoskins, Brock E. (Brock Edward), 1966-

An evaluation of repair techniques used for uncontrolled longitudinal cracking and failed longitudinal joints / by Brock B. Hoskins, David W. Fowler, B. Frank McCullough ; conducted for Texas Department of Highways and Public Transportation by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin, Tex. : Center for Transportation Research, University of Texas, [1991]
v, 21 p. : ill. ; 28 cm. -- (Research report ; no. 920-4)

11 JAN 93 26920000 TLBAsc SEE NEXT CRD

PAVEMENTS--MAINTENANCE AND REPAIR.

TE
220
.H33
H33
1992

Hahn, Kenneth C.
Effects of preventive maintenance on pavement serviceability / Kenneth C. Hahn, J.G. Fred Hiee, Jr. -- Albany, N.Y. : Engineering Research and Davelopment Bureau, New York State Dept. of Transportation ; [Springfield, VA : Available through the National Technical Information Service, 1992]
v, 56 p. : ill., charts, maps ; 28 cm. -- (Research report ; 154)
STRN: FHWA/NY/RR-92/154

1. Pavements--Maintenance and repair.

11 JAN 93 26442074 TLBAsc

PAVEMENTS, REINFORCED CONCRETE--MATHEMATICAL MODELS.

Oversize
TE
278
.W66
M42
1991

Won, Moon-Cheol, 1955-
Mechanistic analysis of continuously reinforced concrete pavement considering material characteristics, variability, and fatigue / by Moon-Cheol Won, Kenneth Hankins and B. Frank McCullough. -- Austin: Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin, 1990
vi, 107p.: ill. ; 29 cm.

1. Pavements, Reinforced concrete--Mathematical models.

19 JAN 93 26646715 TLBAsc

PC DOS (COMPUTER FILE).

A-V
QA
76.76
.O63
I57
1991

Intermediate DOS [videorecording] : version 2.0 to 4.0. -- Torrance, Calif. : Morris Madia, c1991.
1 videocassette (30 min.) : sd., col. ; 1/2 in.

1. PC DOS (Computer file). 2. MS-DOS (Computer file) 3. Operating systems (Computers)

05 FEB 93 24179554 TLBAsc

PC-DOS (COMPUTER FILE)

A-V
QA
76.76
.O63
L42
1990

Learning DOS [videorecording] / Morris Media. -- Torrance, CA : Morris Video, c1990.
1 videocassette (VHS) (30 min.) : sd., col. ; 1/2 in.

1. MS-DOS (computer operating system) 2. PC-DOS (Computer file) 3. Operating systems (Computers)

05 FEB 93 23891010 TLBAsc

PEDESTRIANS--SAFETY MEASURES.

HE
5614.2
.Z43
S86
1991

Zegeer, Charles V.
Synthesis of safety research, pedestrians / [Charles V. Zegeer]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
viii, 102 p. : ill. ; 28 cm.

1. Traffic safety. 2. Pedestrians--Protection. 3. Pedestrians--Safety measures. 4. Pedestrians--Accidents.

05 JAN 93 25457305 TLBAsc

POPULATION FORECASTING--MASSACHUSETTS.

HB
3525
.M4
C37
1990

Carnahan, Douglas L.
A manual on regional and local demographic and economic analysis and projections / by Douglas Carnahan, P.K. Mohanty. -- Boston, MA (60 Temple Pl., Boston 02111) : Metropolitan Area Planning Council, [1990]
76 leaves ; 28 cm.

1. Population forecasting--Massachusetts. 2. Economic forecasting--Massachusetts. 3. Employment forecasting--Massachusetts.

19 FEB 93 26503179 TLBAsc 91-622808

PRESTRESSED CONCRETE BEAMS--TESTING.

TA
683.5
.B3
A26
1990

Abouteha, R. (Riyad Said)
Shear strengthening of pretensioned prestressed concrete composite flexural members/ by R. Aboutaha and N. Burns. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin; 1991
xiii,82p. : ill.; 28cm. -- (Research report; 1210-2)
1. Prestressed concrete beams--Testing. 2. Prestressed concrete--Testing. 3. Composite construction--Testing. 4. Flexure. 5. Shear (Mechanics) 6. Strength of materials. 7. Strains and stresses.

19 JAN 93 27164433 TLBAec

RAILROADS--UNITED STATES--FREIGHT--COSTS.

HE
2301
.U54
R34
1991

United States. General Accounting Office.
Railroad competitiveness : federal laws and policies affect railroad competitiveness : report to the Committee on Commerce, Science, and Transportation, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : U.S. General Accounting Office [distributor, 1991]
38 p. : ill. ; 28 cm.
1. Railroads--United States--Freight--Costs. 2. Railroads--United States--Costs. 3. Railroads and state--Economic aspects--United States.

05 JAN 93 24927381 TLBAsc

ROADS--DESIGN AND CONSTRUCTION.

TE
177
.B57
D47
1989

Bishop, Kirk R.
Designing urban corridors / Kirk R. Bishop. -- Chicago, IL (1313 E. 60th St., Chicago 60637) : American Planning Association, c1989.
38 p. : ill. ; 28 cm. -- (Planning Advisory Service report ; no. 418)

1. Roads--Design and construction. 2. Highway planning. 3. Roadside improvement. 4. Land use, Urban. 5. Regional planning.

11 JAN 93 20658566 TLBAsc 90-138143

ROADS--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1356

Operational effects of geometrics and geometric design. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
v, 89 p. : ill. ; 28 cm. -- (Transportation research record ; 1356)
ISBN 0-309-05220-3

1. Roads--Design and construction. 2. Roads--Interchanges and intersections. 3. Traffic engineering.

05 JAN 93 26586832 TLBAsc 92-32654

ROADS--LIGHTING.

TK
4188
.Z55
D48
1991

Zimmer, Richard A.
Development of ISO-footcandle curves for highway lighting / by Richard A. Zimmer. -- Rev. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
xiii, 105 p. : ill. (some folded) ; 28 cm. -- (Research report ; 1144-1F)
STRN: FHWA/TX-91/1144-1F

1. Roads--Lighting. 2. Roads--Safety measures.

11 JAN 93 27164938 TLBAsc

ROADS--MAINTENANCE AND REPAIR.

HE
131
.T687r
no.1352

Maintenance management, traffic safety, and snow removal. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
v, 82 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1352)
ISBN 0-309-05216-5

1. Roads--Maintenance and repair. 2. Roads--Maintenance and repair--Safety measures. 3. Traffic signs and signals. 4. Roads--Snow and ice control.

11 FEB 93 26400379 TLBAsc 92-30100

ROADS--TEXAS--FINANCE.

HE
336
.E3
S76
1991

Stokes, Robert W.
Economic development impacts of expenditures for state highway improvements in Texas : preliminary findings / by Robert W. Stokes, Nat Pianoi and Earl J. Washington. -- College Station, TX : Texas Transportation Institute, Texas A&M University System ; Springfield, Va. : [Available throught the National Technical Information Service, 1991]
ix, 57 p. : ill. ; 28 cm. -- (Research report ; 1228-2P)
STRN: FHWA/TX-91/1228-2P
1. Roads--Texas--Finance. 2. Roads--Design and construction--Economic aspects--Texas. 3. Roads--Economic aspects--Texas.

11 JAN 93 26733956 TLBAsc

ROUTE 146 (MASS.)

HE
356
.M4146
R449
1991

Adams, Virginia Hedges.
Historical and architectural survey report : Route 146 improvements, Worcester and Millbury, Massachusetts / Virginia Hedges Adams, Andrew C. Vintere ; submitted to Massachusetts Dept. of Public Works ; submitted by the Public Archaeology Laboratory. -- Pawtucket, R.I. : The Laboratory, 1991.
2 v. : ill., maps ; 28 cm. -- (PAL report ; no. 146-2)
1. Route 146 (Mass.) 2. Massachusetts Turnpike (Mass.) 3. Highway relocation. 4. Worcester (Mass.)--Antiquities. 5. Millbury (Mass.)--Antiquities.

Rev-1 1-14-93 TLBAsc

ROUTE 146 (MASS.)

Oversize
HE
356
.M4146
R44
1992

Route 146 relocation and MA Turnpike Interchange : preliminary site investigations, Worcester and Millbury, MA / Cortell Associates. -- Waltham, Mass. : Cortell Associates, 1992.
2 v. : ill., maps, plans ; 29 cm.

1. Route 146 (Mass.) 2. Massachusetts Turnpike (Mass.) 3. Roads--Massachusetts--Worcester--Interchanges and intersections. 4. Roads--Massachusetts--Millbury--Interchanges and intersections. 5. Highway relocation.

Rev-1 1-13-93 TLBAsc

ROUTE 146 (MASS.)

HE
356
.M4146
R448
1992

Route 146 relocation and MA Turnpike Interchange : soil and groundwater sampling and analysis plan, Worcester and Millbury, MA / Cortell Associates. -- Waltham, Mass. : Cortell Associates, 1991.
[114] leaves : ill., maps, plans ; 2[illegible] cm.

Rev-2 1-14-93 TLBAsc SEE NEXT CA

ROUTE 146 (MASS.)

HE
356
.M4146
R445
1992

Route 146 relocation and MA Turnpike interchange : wetlands/water quality technical information, Worcester and Millbury, MA. -- [Boston, Mass.] : Massachusetts Dept. of Public Work ; [Boston, Mass.] : Massachusetts Turnpike Authority, 1992.
[124] p. ; 28 cm.
1. Route 146 (Mass.) 2. Massachusetts Turnpike (Mass.) 3. Highway relocation. 4. Roads--Massachusetts--Worcester--Interchanges and intersections. 5. Roads--Massachusetts--Millbury--Interchanges and intersections. 6. Wetlands--Massachusetts--Worcester. 7. Wetlands--Massachuset te--Millbury.

Rev-1 1-14-92 TLBAsc

STRUCTURAL ENGINEERING.

TB
845
.S34
W59
1980

Salvadori, Mario George, 1907-
Why buildings stand up : the strength of architecture / Mario Salvadori ; ill. by Seralinda Booker and Christopher Ragus. -- 1st ed. -- New York : Norton, c1980.
311 p. : ill. ; 25 cm.
ISBN 0-393-01401-0

1. Structural engineering.

19 JAN 93 6304870 TLBAsc 80-16285

SHAME.

A-V
RC
455.4
.S53
B72
1989

Bradshaw, John, 1933-
Healing the shame that binds you [sound recording] / presented by John Bradshaw. -- Deerfield Beach, FL : Health Communications, Inc., c1989.
2 sound cassettes (132 min.) : analog, 1 7/8 ips, stereo.; Dolby processed. -- (HCI audio books)
ISBN 1-55874-043-0

1. Shame. 2. Psychotherapy.

29 JAN 93 20401956 TLBAsc

TOURIST TRADE--TEXAS--STATISTICS.

G
155
.T4
S73
1991

Stewart, William P.
A preliminary validity study of the Texas auto visitor profile / by William P. Stewart, Chi-Chuan Lue, and B. Scott Anderson ; sponsored by Texas State Department of Highways and Public Transportation [and] Department of Recreation, Park, and Tourism Sciences in cooperation with the Texas Transportation Institute, Texas A&M University. -- College Station, Tex. : The Institute ; Springfield, Va. : Available through the National Technical Information Service, [1991]
1x, 110 p. : ill. ; 28 cm. --
(Research report ; 1299-1F)
STRN: TX-92 /1299-1F

11 JAN 93 26466104 TLBAsc SEE NEXT CRD

SPEECHES, ADDRESSES, ETC.

REF.
PN
6121
.C66
W67
1973

Copeland, Lewis, ed.
The world's great speeches. Edited by Lewis Copeland and Lawrence W. Lamm. 3d enl. ed. New York : Dover Publications, [1973]
xxi, 842 p. ; 22 cm.
ISBN 0-486-20468-5

1. Speeches, addresses, etc.

25 JAN 93 1197199 TLBAsc

TRAFFIC ACCIDENTS--CALIFORNIA.

HE
5614.3
.C2
T65
1992

Tom, Gregory K. J.
Accidents on spiral transition curves in California / prepared by Gregory K.J. Tom. -- [Sacramento, CA] : California Dept. of Transportation, Division of Traffic Operations, [1992]
49 leaves ; 28 cm.
STRN: FHWA/CA/TO/TOS-92-3

1. Traffic accidents--California. 2. Rural roads--California--Design and construction.

11 FEB 93 27209494 TLBAsc

SPEED LIMITS--CALIFORNIA.

HE
5620
.S6
B35
1989

Bamfield, J. D.
Accidents before and after the 65 mph speed limit in California : report / by J.D. Bamfield. -- [Sacramento] : California Dept. of Transportation, Division of Traffic Operations, [1989]
15 leaves : charts ; 28 cm.

1. Traffic accidents--California. 2. Speed limits--California.

11 FEB 93 23657380 TLBAsc

TRAFFIC ENGINEERING--DICTIONARIES--ENGLISH.

REF.
HE
332.3
E53 1991

English/Spanish highway technical reference terms and definitions = Ingles/Espanol referencia tecnica de carreteras terminos y definiciones / prepared by Research Bureau, New Mexico State Highway and Transportation Department. -- Santa Fe, N.M. : New Mexico State Highway and Transportation Dept. ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
79 p. ; 28 cm.

19 JAN 93 25196150 TLBAsc SEE NEXT CRD

TRAFFIC REGULATIONS--UNITED STATES.

REF.
KF
2209
.U54
1992

Uniform vehicle code and model traffic ordinance. -- Rev. -- Evaneton, IL : National Committee on Uniform Traffic Laws and Ordinances, 1992.
xxvi, 147, viii, 15 p. ; 28 cm.

1. Traffic regulations--United States. 2. Automobiles--Law and legislation--United States. 3. Motor vehicles--Law and legislation--United States.

19 JAN 93 27078837 TLBAec

TRAFFIC SIGNS AND SIGNALS.

TE
228
.E43
A52
1990

Emhjellen, Kjetil, 1965-
An analysis of roadway user information systems / by Kjetil Emhjellen [et al.] ; conducted for Texas State Dept. of Highways and Public Transportation ; by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin, Tex. : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1990]
vi, 100 p. : ill. ; 28 cm. --
(Research report ; no. 957-2P)
STRN: PBWA/TX-91+957-2P
1. Street s ligns. 2. Traffic signs and sig nals.

Rev-1 1-15-93 TLBAec

TRANSPORTATION--MASSACHUSETTS--PLANNING.

REF.
Oversize
HE
214
.B71
E57
1992

EOTC financial advisory assistance : phase 1-2 : deliverables and supporting materials. -- [Boston, Mass.] : Deloitte & Touche, [1992]
2 v. in 1 : ill. ; 29 cm.

1. Massachusetts. Executive Office of Transportation and Construction. 2. Transportation and state--Massachusetts. 3. Transportation--Massachusetts--Planning. 4. Privatization--Massachusetts. 5. Massachusetts Intermodal Transportation Authority.

Rev-2 1-25-93 TLBAec

TWELVE-STEP PROGRAMS--MEDITATIONS.

A-V
BL
624.5
.P76
1988

The Promise of a new day [sound recording] / Metacom. -- Minneapolis : Metacom, p1988.
1 sound cassette : analog, 1 7/8 ips. -- (Hazelden audio cassette library) (Audio meditation series)
Metacom: BL 102.
ISBN 0-88676-312-6

1. Substance abuse--Psychological aspects. 2. Motivation (Psychology) 3. Meditations. 4. Twelve-step programs--Meditations.

18 FEB 93 18687598 TLBAec

UNITED STATES--ECONOMIC CONDITIONS--1981- --PERIODICALS.

HC
106.8
.W318

The ... Development report card for the states. -- 1989- . -- Washington, D.C. : Corporation for Enterprise Development with Mt. Auburn Associates, c1988-
v. : ill. ; 28 cm.
Annual.
Continues: Making the grade.
ISSN 1053-3672 = The Development report card for the states

1. United States--Economic conditions--1981- --Periodicals. 2. Economic indicators--United States--Periodicals. 3. Index numbers (Economics)--Periodicals.

29 JAN 93 20619094 TLBAmc 93-642461

UNITED STATES--HISTORY, MILITARY--CHRONOLOGY.

Oversize
E
173
.A44
1990

Almanac of America's wars / general editor, John S. Bowman. -- New York : Mallard Press, 1990.
192 p. : ill. ; 37 cm.
ISBN 0-7924-5268-2

1. United States--History--Chronology. 2. United States--History, Military--Chronology.

Rev-1 1-25-93 TLBAmc

WOMEN IN BUSINESS.

A-V
HD
6054.3
.H68
1990

Price, Carol.
How to present a professional image [sound recording] / with Carol Price. -- Boulder, CO : CareerTrack Publications, 1990.
4 sound cassettes : 1 7/8 ips.
ISBN 1-55977-055-4

1. Self-actualization (Psychology) 2. Women--Psychology. 3. Visualization. 4. Self-confidence. 5. Women in business. 6. Women in the professions.

19 FEB 93 23124047 TLBAmc

WORDPERFECT (COMPUTER FILE).

A-V
Z
52.5
.W65
L42
1990

Learning WordPerfect 5.1 [videorecording]. -- Version 5.1. -- Torrance, Calif. : Morris Video, c1990.
1 videocassette (30 min.) : sd., col. ; 1/2 in.
ISBN 1-55746-157-0

1. Word processing--Computer programs. 2. WordPerfect (Computer file).

05 FEB 93 22963828 TLBAmc

AMERICAN CITY & COUNTY®

April 1993 Vol. 108, No. 5

COLUMNS

4 **Editor's View**...A Burning Issue in Solid Waste
10 **Information Technology**...CAFM Helps Cities Watch Over Costs
12 **Financial Management**...Safeguarding Public Funds
14 **Inside Washington**...Clinton Plan Draws Local Cheers

ECONOMIC DEVELOPMENT

30 **Zoned for Success**
Enterprise zones have long been debated as a way to solve the problems of inner cities. But are they the panacea cities have been looking for or just political pie-in-the-sky? ☐ **32** Proper Packaging Raises a City Above the Competition ☐ **36** Incentive Programs Revive a City's Historic Resources ☐ **38** Federal Office Building Serves as a Catalyst for Area Development

COVER STORY

40 **Top to Bottom**
Building roads and bridges is not always the least disruptive or environmentally sound of activities. But top-down construction has allowed previously unbuildable projects to proceed. ☐ **42** Precast Arch System Saves Installation Time, Costs ☐ **46** Concrete Pavers Durable for the Long Haul ☐ **80** Paving the Way ☐ **82** Liquid Calcium Chloride Remedies Road Repair Problems

PARKS AND RECREATION

56 **Kid Tested, City Approved**
Local parks and rec departments are becoming social service agencies as cities direct them to intervene on behalf of at-risk youth. ☐ **58** Golf Courses Offer Cash Flow Alternatives ☐ **63** Carnegie Council Comments on Youth at Risk ☐ **64** Safety First for Public Playgrounds ☐ **67** Hillside Community Center Brings Neighbors Together

AMERICAN CITY & COUNTY®

1993 Municipal Index

March 31, 1993 Vol. 108, No. 4

COLUMNS

4 **Editor's View** Public Works Boosts Economies

FEATURE STORY

6 **Value Architecture** A Response to Renewed Fiscal Responsibility

MUNICIPAL INDEX

8 **How To Use and What To Find in the Municipal Index**
A guide for locating information on the sources of municipal needs and the officials with the power to purchase goods and services.

9 **Products and Services Index**
Alphabetical listing of total categories and where they may be found in the Products and Services section.

18 **Products and Services**
The largest listing of equipment and products used in the fields of construction, public safety, refuse removal, sewage and water treatment and all other types of public works.

257 **Professional Services Directory**
Engineers, consultants and other providers of special services present their business cards.

260 **Suppliers**
All providers of products and services are listed alphabetically with addresses, phone numbers, product information and, in many cases, branch offices. Cross-references to display advertising make this section a valuable summary of supplier information.

324 **Municipal Officials**
Government officials are shown by name and title for each municipality with a population more than 10,000. Nearly 3,000 municipalities are shown.

400 **Advertisers Indexes**
Presented under the categories of products and services they provide, display advertisers in this issue of MUNICIPAL INDEX are listed with the page numbers of their advertisements and the reader service numbers which may be circled for more information. An index of advertisers in alphabetical order follows.

APWA Reporter

Official Magazine of the American Public Works Association
Volume 60 / Number 3 / March 1993

Articles

4 **APWA acquires Thayer Place**
The American Public Works Association has recently completed acquisition of Thayer Place, our future headquarters facility in Kansas City, Missouri.

5 **An open letter to chapters and members**/Harold E. Smith
This article is a letter from Harold E. Smith, chairman of the Capital Campaign Coordination Committee, concerning the state of the fundraising campaign for relocation of APWA headquarters.

6 **Consulting engineering firms invest at the $25,000 level**
APWA has received leadership commitments from four consulting engineering firms on behalf of the *Rebuilding for the Future Campaign*. This is a short article describing each of these firms and thanking them for their investments in the future of public works.

9 **National Quality Initiative**
The highway industry and the government have formed a partnership devoted to increasing quality in highway construction. Several government and industry organizations formed a policy concerning quality consciousness and are now holding workshops to take the word to the streets.

10 **Innovative fleet services reduce costs**/M.A.T. Bamford
The City of Calgary, Alberta, Canada describes its fleet's preventive maintenance system which reduces breakdowns to a minimum, and keeps costs low.

12 ***Wilson Quarterly* features infrastructure**
This article contains excerpts from the most recent issue of *Wilson Quarterly*, which discuss the past, present and future of infrastructure policies and programs.

15 **Photo directory of APWA staff**
As a service to APWA members, this issue contains a pull-out photograph directory of all current members of the Kansas City staff, with phone extension numbers. Of the 37 Kansas City staff members, 31 are new to the organization.

APWA Reporter

Official Magazine of the American Public Works Association
Volume 60 / Number 2 / February 1993

Articles

5 **Kansas City executives to welcome APWA**
The business community of Kansas City is rolling out the welcome mat to the leadership of APWA by sponsoring a kick-off event which will assist the association in introducing itself and raising funds for the "Rebuilding for the Future" campaign. Read about the planned reception, and also about the chapter, Sustaining Member, and consulting engineer firm gifts that continue to roll in.

6 **Conference to highlight snow study** / Connie Hartline
"When Push Comes to Shovel" is the theme for the 33rd Annual North American Snow Conference, to be held in Cleveland, Ohio, April 18-21, 1993. Sessions will cover such topics as deicing issues and methods, environmental concerns, technological advances, and the results of a national study on the relation of deicing to traffic accidents.

6 **To reach APWA in Kansas City**
APWA's new headquarters office in Kansas City opened for business on February first. Read about how to contact the necessary people in our new offices.

10 **The 'good' pollutant vs. the 'bad' pollutant: a matter of choice?** / David W. Birks and Ann B. Kulik
Public works projects are coming under increasingly intense public scrutiny. To meet the challenge of developing an infrastructure plan that the public accepts, we have to understand what motivates our citizenry and how to communicate our intentions to them. We need to learn how to talk about spending in terms that are palatable to the general public.

14 **APWA welcomes new staff members**
Read this article and get acquainted with several new staff members who recently joined the association.

15 **The big picture** / Alan R. Clark
The State of North Carolina is applying a basin-wide approach to each of the major river basins in the state as a means of identifying water quality problems, developing appropriate management strategies, and assuring equitable distribution of assimilative capacity. Read this article to learn how the plan is helping the state deal with some old water quality problems in entirely new ways.

17 **Damage prevention is serious business**
The One-Call Systems International/APWA One-Call Systems and Damage Prevention Symposium is scheduled for April 4–7, 1993, in historic Williamsburg, Virginia. The event will offer six "tracks," over 15 different roundtable discussions, a vendor program and exhibit, and a guest program.

AMERICAN DEMOGRAPHICS

MAY 1993 VOL. 15, NO. 5 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

What's in a Brand? 26

Brand management can make or break a company's reputation. yet brands are nothing more or less than an image in consumers' minds. Brand managers must ask who buys the brand, what do they want from it, and why do they keep coming back?. ..... *by Diane Crispell and Kathleen Brandenburg*

Taming the TV Beast 34

Technological change is ushering in a new age for television. The next generation of TV will bring a vast number of programming and advertising options into American living rooms. But several hurdles remain, including uncertainty about consumer demand. ..... *by Rebecca Piirto*

Going to Town 42

Consider two facts about America's 35 largest metros: workers are increasingly likely to cross county lines to get to their jobs, and the number of jobs has grown faster than the population. This analysis of census data shows the root causes of traffic jams. ..... *by Richard L. Forstall*

In Pursuit of Pregnancy 48

Infertility is a multibillion-dollar industry, driven by technological advances and an aging baby boom. One in ten infertile couples may benefit from high-tech treatments. Insurers foot some of the bill, but most costs—and all of the risks—are covered by the patients. ..... *by Paula Mergenhagen DeWitt*

BUSINESS REPORTS

Where Generations Divide 9

Diversity in Corporate America 12

Timesharing Sheds a Shady Image 14

Reaching Black Teenagers 15

Commercials on the Phone 18

Baby-Food Sales 20

Overcrowding in New York City 23

DEPARTMENTS

Editor's Note
New Threats to Public Data 2

Seasons
Spring Sneezes 4

Multimedia
Living-Room Wars 6

The Lincoln Sample 56

Letters 57

Demographic Forecasts
Settle Down, Baby 59

New Frontiers
A Better America 60

AMERICAN DEMOGRAPHICS

APRIL 1993 VOL. 15, NO. 4 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

¡Vivan los Suburbios! 30

Almost half of Hispanic Americans live in suburban areas. The suburbs are the best places to find middle-class Hispanics, a diverse and rapidly growing market. Our guide reveals the biggest, fastest-growing, and most affluent Hispanic suburbs. ..... *by William H. Frey and William P. O'Hare*

Educating Diversity 38

As the share of foreign-born Americans grows, the nation's schools rediscover an old problem: educating millions of children who don't speak English. The new immigrants need more assistance than their predecessors did. Many schools are now teaching students' families how to adjust to life in America. ..... *by William Dunn*

Garden Variety Customers 44

Gardening is America's most popular leisure activity, enjoyed by one in three adults. Businesses that manufacture everything from clothing to furniture can profit from cultivating this active group. Here's a profile of four gardening types. ..... *by Judith Waldrop*

How to Talk to Young Adults 50

A new generation is demanding attention from businesses. To win the hearts of baby busters, business leaders must rewrite the laws of advertising. ..... *by Susan Mitchell*

BUSINESS REPORTS

Rock and Roll for Modern Youth 9

The Great Tax Cut of 1991 14

A Guide to Boom Towns 15

A Magazine for Cigar Smokers 16

Ear Infections Increasing 21

Nonimmigrant Alien Workers 24

Time-Pressured Americans 26

DEPARTMENTS

Publisher's Note
The Land of Opportunity 2

Seasons
Rush for the Refund 4

Dear Dr. Demo
Come to Your Census 6

The Lincoln Sample 56

Letters 57

Demographic Forecasts
Cover That Gray 59

New Frontiers
Smart Spots 60

BusRide

ISSN 0192 8902 April 1993

FEATURE ARTICLES

36 Blue Bird Coach Lines—A mainstay in New York and the Northeast for 75 years

42 Le Bus—Miami tourist coach operator prospers despite hurricane and other setbacks

45 Applications for Tourism Management Scholarship due June 11

48 Graphics Competition deadline is June 18

48 Three bus maintenance forums are scheduled

49 Maintenance Management Scholarship being offered

49 Information needed for 1993 *Bus Industry Directory*

50 Buses play vital role in Swiss coordinated transport system

52 Vintage bus display and memorabilia flea market to be featured at "A Gathering of Buses"

53 *George M. Smerk:* Low ridership woes must be met head-on

54 Air Springs—No maintenance is the best maintenance

56 First bus maintenance forum in Alaska to be held

58 Bus transportation in Nepal: A rough and tough operation

62 Walt Disney World Seminars—Strengthening transit executives' people skills

67 Minneapolis will be site of Pioneer Bus Maintenance Forum

68 The Blizzard of '93: A test of stamina and courage

72 Developments for reducing emissions highlighted at Century Bus Forum

74 Announcing the 1993 MotorVisions Coach Design Competition

75 Bus Photo Competition deadline is July 10

76 Aloha Fleet Safety Forum

77 Aloha Bus Maintenance Forum

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOL. 63, NO. 4
APRIL 1993

FEATURES

HOW NORTH CAROLINA RUNS ITS WILDFLOWER PROGRAM 16

HOW ARIZONA HANDLES WINTER ROADS 19

HOW RECYCLING REDUCES REHAB COSTS 20

HOW TO SOLVE GRAVEL ROAD MAINTENANCE PROBLEMS 23

NEW METHOD UPS PLASTIC CONTENT USABLE IN ASPHALT 24

NUCLEAR GAUGE TRAINING: BEYOND THE BASICS 26

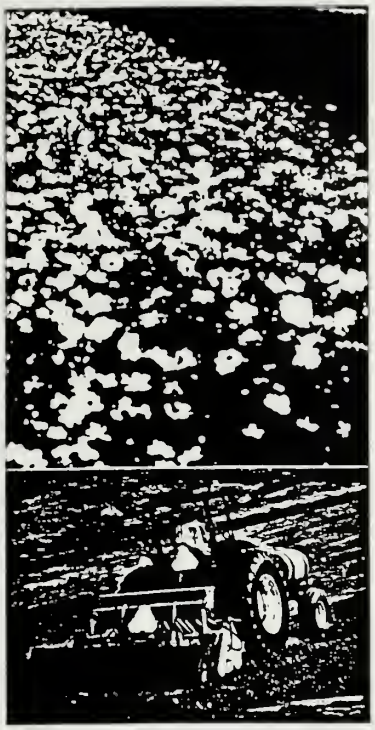
NUCLEAR GAUGE FACTS YOU NEED TO KNOW 26

FIBER OPTICS HELP TWIN CITIES' TRAFFIC CONTROL 28

THE 10 COMMANDMENTS OF CONTRACTED WORK 30

DID YOU WIN OUR SAFETY QUIZ? 31

WAYNE MURI ON ISTEA 33



OUR COVER

A fumigation rig (insert) helps eliminate weed competition, resulting in a good stand of wildflowers. *Photos courtesy of the North Carolina Department of Transportation.*

CIVIL ENGINEERING
MARCH 1993 VOLUME 63 NUMBER 3

SPECIAL ISSUE: HAZARDOUS WASTE

FEATURES

SUPERFUND: NEW LEADERSHIP, OLD PROBLEMS The controversial program faces a Democratic administration and reauthorization by a new Congress. Will it survive? *By Teresa Austin* 46

ENVIRONMENTAL CONSULTING GROWS UP Fixing Superfund could benefit environmental firms, which need some good news after learning last year that they aren't recession-proof after all. *By John Prendergast* 50

SAMPLING SEDIMENT ON A COMPLEX SITE Remedial design of the Marathon Battery Superfund site in Cold Spring, N.Y. hinged on a variety of sampling methods required by diverse terrain. *By John J. Nocera, Gregory P. Matthews and Thomas M. Simmons* 54

A NATURAL CLEANUP In situ bioremediation can be a cost-effective way to remediate soils and ground water contaminated with organic compounds *By Christopher H. Nelson* 57

DATA VALIDATION PRACTICES AND RISK ASSESSMENT The quality of risk assessments would improve if data validators had more contextual information about the data as well as unified standards. *By V. Balasundaram and N. Shashidhara* 60

FAST FOUNDATION FOR SOFT CLAY Engineers had to fast-track a retrofit project for a powerplant, placing foundations for heavy loads on soft clays. In spite of the constraints, the job was finished on time. *By Joseph R. Hilton Jr., Ronald E. Rager and Richard L. Novotny* 62

MSA FOR VOC REMOVAL Mechanical surface aeration—usually used in wastewater treatment—is removing volatile organic compounds from potable ground water in Santa Monica, Calif. *By Craig W. Lickty and Joseph A. Drago* 66

THE 'CRIMINALIZATION' OF GOVERNMENT PROCUREMENT If you do business with the federal government, you could be criminally liable for violations under new regulations. Here's how to set up a compliance program. *By Richard D. Lieberman* 68

ENGINEERING: ENVIRONMENTAL VS. DEVELOPMENTAL GOALS The winner of the Daniel W Mead Student Paper competition. *By Dale A. Watson* 70

BANKING ON A BRIDGE Faced with varved clays and a tight schedule, engineers used a unique set of methods to build the embankments and foundations for the Charter Oak Bridge in Hartford, Conn. *By Alec D. Smith and Dan T. Kinard* 72

SCOPING OUT SCOUR Nondestructive testing tools can provide quick and precise data on dangerous bridge scour. *By Thomas J. Fenner* 75

CIVIL ENGINEERING
APRIL 1993 VOLUME 63 NUMBER 4

SPECIAL ISSUE: TRANSPORTATION

FEATURES

IVHS: THE INVISIBLE REVOLUTION The next few years should tell whether intelligent vehicle highway systems are the next revolution in transportation or just a high-tech toy. *By John Prendergast* 42

RECYCLED ROADS Old tires, wood chips and scrap plastic are just a few of the wastes being recycled in our nation's highways. *By Paul Tarricone* 46

MASSPORT MODERNIZATION A $50 million modernization of Boston's 1940s-vintage Paul W Conley Marine Terminal will prepare the facility for the 21st century world of intermodal transportation. *By Bradley P. Erickson, Thomas J. McCollough and Alexander Surko Jr.* 50

DRIVING UNDER A CONSTRUCTION SITE Engineers for a light-rail overpass in Southern California adapted technology used in long-span bridge construction. *By Rafael Manzanarez and Dennis R. Smith* 54

SUPPLY-SIDE SOLUTIONS Engineers and contractors—the supply side of the construction equation—have innovative solutions to our bridge problems. It's up to the demand side, the bridge owner, to unleash their creativity. *By Nils Olsson* 57

WHAT DO YOU MEAN BY THAT? To get beyond the buzzwords, we asked a panel of experts for a no-nonsense critique of six phrases you hear every day. 60

PLASTIC PILING Composite plastic-and-steel piles are finding acceptance in the realm of the timber barons, the Pacific Northwest. *By Roney Heinz* 63

PREDICTING POLLUTION New software allows better forecasts of mobile emissions using traffic models—without adding to costs. *By William Loudon and Malcolm Quint* 66

MOTIVATING TECHNICAL EMPLOYEES Creative, smart and independent technical employees need more than money to feel motivated. Managers seeking a committed work force should start by sharing information, responsibility, challenges and growth. *By William F. Peck* 68

BETTER ROADS

CONSUMER REPORTS

IN THIS ISSUE

March 1993 Volume 58, No. 3

127 Chrysler tries again
Chrysler's new LH cars—Dodge Intrepid, Chrysler Concorde, Eagle Vision—hold their own with Toyota Camry and Mercury Sable

134 Garment bags
How to choose a carry-on that packs the features you need.

139 GUIDE to the GEAR

140 How to decide
An easy-to-use guide to the big picture in home entertainment.

144 Large TV sets
The world of more: More screen, more sound, more dollars—many more dollars for the traditional and projection sets we tested

148 VCRs
You'll want good picture quality and handy features, but you may not want to spend extra for the superior sound of a hi-fi model.

151 Camcorders
How the dominant types—8mm and VHS-C—compare

164 Receivers
The ones we tested offer very good value. We found seven Best Buys

166 Three-piece speakers
They give the bass a box of its own. As a result, you can get good performance from unobtrusive components.

168 CD players
Whether magazine changer or carousel, they performed well

176 Tape decks and cassette tapes
Basic advice to help you choose the right tape deck and tapes

178 Remote controls
What makes the zapper user-friendly or user-frustrating.

IN THIS ISSUE

April 1993 Volume 58, No. 4

196 How CU tests cars
Here's what we do and how we do it

199 Which cars are safest in a crash
If some cars can provide ample protection, why not all?

204 Should you lease?
The ads tell one story; the fine print, another.

207 To deal or not to deal?
"No-haggle" pricing makes the buying experience more pleasant. But you may pay a couple of hundred dollars for the pleasure

211 Which options to choose
How to equip a new car sensibly

213 Ratings of the 1993 cars
Recommendations, and detailed information on more than 150 models

234 Picking a reliable car
Reliability rankings, plus Frequency-of-Repair data for 312 models, based on reader reports on 583,000 cars.

256 Would you buy that car again?
Results of our annual poll of owner satisfaction.

258 Facts and figures
Mechanical specifications and body dimensions for the 1993 cars

265 Finding a good buy in a used car
Advice on how to shop, plus our picks of good and bad used cars.

COMMUNICATION ARTS

May/June 1993

Volume 35, Number 2

FEATURES

40 MARGO CHASE DESIGN
Fashion and entertainment clients appreciate this Los Angeles-based designer's mythological imagery
By Julie Prendiville

50 STEVE HIX
This Midwest-based location photographer began his career as a copywriter and television producer
By Jean A. Coyne

60 HOWARD, MERRELL & PARTNERS
A Raleigh, North Carolina, agency that believes creativity is what makes advertising work
By Jim Johnston

70 DAVID LANCASHIRE
An Australian designer who uses illustration to communicate
By Patrick Coyne

80 MICHAEL PARASKEVAS
This Southampton, New York, illustrator describes his approach as "graphic journalism"
By Michael Kaplan

90 DOYLE DANE BERNBACH
A look back at one of the most influential advertising agencies of this century.
By Mill Roseman

102 GOOD DESIGN IS GOODWILL
A chapter from Paul Rand's latest book, Design, Form and Chaos

111 EXHIBIT
Reproductions of the latest and best in visual communication from here and abroad.

GOVERNING

MARCH 1993 / VOLUME 6 NUMBER 6

TRENDS

20
The War on School Violence
By Anne Chase
Schools don't have to be shooting galleries. You can use tough security measures. You can teach kids to use words, not bullets. Or you can do both.

22
Field and Lawn
By Rob Gurwitt
When suburbs and farms meet, all too often the result is a lawsuit. Counties are planting a new crop of "right-to-farm" laws.

23
Officer Killjoy
By Jonathan Walters
Government is cracking down on rollerbladers, bungee-jumpers and whitewater rafters. Should it?



ON THE COVER: The idea that government can be reengineered is the subject of Paul Salmon's illustration.

FEATURES

26
The Impulse To Reengineer
By John Martin
A process with its roots on the factory floor is being touted as the best way to turn a clogged bureaucracy into a performance machine.

32
Farewell to The Asylum
By Charles Mahtesian
Just about everyone agrees that big state mental hospitals are obsolete. But can they be closed without doing more harm than good?

38
Juries on Trial
By Kathleen Sylvester
The Rodney King verdict in Los Angeles has spawned a nationwide reappraisal of how well the jury system works.

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on why the rich aren't getting soaked.

10
Dialogue
Letters from readers, and a commentary by Austin V. Koenen.

13
Connections

14
Network



14

56
Management

57
Finance

58
Environment

60
Clinton and the Country
The president wants to set up a hundred new banks to spark community development. To bankers, that's not a thrilling idea.

GOVERNING

APRIL 1993 / VOLUME 6 NUMBER 7

TRENDS

22
Between Parents And Daughters
By Kathleen Sylvester
Three dozen states now require minors seeking abortions to tell parents or seek their permission. But do those laws work?

GOVERNING GUIDE

Beyond Images
Governments are finding that imaging technology can be a useful tool for managing data as well as documents. Page **45.**



24
When Is It Time To Stop Driving?
By Karen Ann Coburn
As the number of drivers over 65 increases, policy makers are weighing the rights of the elderly against public safety.

26
Voting in Tongues
By Rob Gurwitt
Federal law is requiring more localities to give voting help to people who don't speak English well. It's costly, and so far not many are using it.



ON THE COVER: The formidable problem recycling's success has created for government is the subject of Sally Wern Comport's illustration.

FEATURES

28
How to Cut The Recycling Glut
By Tom Arrandale
Subsidies and incentives can help build markets for all of the stuff piling up in municipal recycling yards. But so far, nothing seems to beat old-fashioned mandates.

34
Rendell-mania
By Charles Mahtesian
In barely a year, Mayor Ed Rendell has put the fiscal train wreck that was Philadelphia back on track. Can he reinvigorate the city?

40
Banks and the Urban Frontier
By Penelope Lemov
A federal law has given local officials the stick they need to push banks toward investing in troubled neighborhoods. But a city has to know how to use it.

GOVERNING SPECIAL REPORT

THE PUBLIC'S CAPITAL
59 The new politics of water, the trouble with toll roads, and opportunities and obstacles in Russian infrastructure.

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on planting trees and eating fruit.

10
Dialogue
Letters from readers, and a commentary by Barry Keene.

15
Connections

16
Network



21

76
Finance

76
Technology

80
Management

84
Clinton and the Country
When it comes to deciding where to funnel money for local projects, the president thinks Congress should butt out.

Hispanic BUSINESS

April 1993 Volume 15, Number 4

COVER STORY
AN AMERICAN STATESMAN 44
The search for an heir to Senator Dennis Chavez continues.

SCHOOLS
A COURSE IN POLITICS 8
Did curriculum or effectiveness force out New York's chancellor?

LEADERS
THE ECONOMIC COMMANDO 10
He's young, conservative, and San Diego's new chamber president.

POLITICS
A LONE STAR IN TEXAS? 14
Jose Angel Gutierrez sheds outsider image in bid for Senate.

POLICY
BREAKING THE BELTWAY BARRIER 16
Can lobbyists win the war for Washington clout?

RADIO
TURNING POINT FOR SPANISH RADIO 24
Stations in Los Angeles and San Antonio outperform competitors.

MEDIA
TELEVISION'S NEW POT OF GOLD 28
Cable companies are tuning in to the Hispanic market.

WASHINGTON
MAN WITH A PLAN 36
Careful strategy has been the luck of Federico Peña.

PRINCE OF THE CITY 52
The secrets to Henry Cisneros's leadership style.

Journal of Urban Planning and Development

Volume 119 Number 1 March 1993

TECHNICAL PAPERS

SITE CODE: Computer-Based Regulatory Information for Site Development.
Douglas T. Shaw, David R. Maidment, and George N. Arimes 1

Multiobjective Land-Use Planning Model.
Vedia F. Dokmeci, Gülen Çağdaş, and Selma Tokcan 15

Modeling School Utilization and Consolidation
Richard L. Church and Alan T. Murray 23

Infrastructure-Management-System Analysis
W. J. Thornton and H. D. Ulrich 39

DISCUSSION

Statistical Models to Predict Commercial- and Parking-Space Occupancy Erin McGuiness and Sue McNeil.
By J. M. Kenelpp. Closure by authors 48

REVIEWERS OF THE *JOURNAL OF URBAN PLANNING AND DEVELOPMENT* 51

Industrial Engineering

The Magazine for Systems Integrators

Volume 25, No. 4 April 1993

FEATURES

STRATEGIES FOR IMPROVING AMERICA'S HEALTHCARE SYSTEM 24
IEs can play a vital role in achieving substantial improvement in healthcare
By Loyd E. Eskildson

APPLICATION OF ECONOMIC CONTROL CHARTS BY A NURSING MODELING TEAM 27
Henry Ford Hospital applies techniques to solve aggregate planning problems
By William R. Schramm and Louis E. Freund

MATURING OF MANAGEMENT ENGINEERING IN TODAY'S HOSPITALS 32
The IE is now analyzing operational practices impact on clinical outcomes
By Mickey Patnick and Tom Scott

AUTOMATIC IDENTIFICATION BUYERS' GUIDE ..... BG 1
A complete listing of products and services from 168 companies

SIMULATION PROGRAMMING FOR HEALTHCARE 52
But first it is necessary to consider all the areas that must be dealt with
By Philip Hubert

RESOURCE MANAGEMENT ENSURES HEALTHY OPERATIONS AT SPOHN HOSPITAL 54
Management engineers at Spohn play an important role in the management of the hospital's systems
By Sonja Lee

AUTOMATIC ASSEMBLY SYSTEMS IN JAPAN AND RELATED INDUSTRIAL ENGINEERING PROBLEMS 56
An investigation on automatic assembly systems and IE problems in Japan
By Tatsumi Koshiba Masayasu Tanaka and Tatsuji Miura

ADAPTING TO A CHANGING SYSTEM PROCEDURE 61
An adaptation procedure for companies that are faced with a system change
By Irwin W. Kabak and George Siomkos

SCIENTIFIC MANAGEMENT AND SUPREME COURT JUSTICE LOUIS DEMBITZ BRANDEIS 63
Most IEs are unaware of Justice Brandeis influence on scientific management
By Marshall Schneider

A DIFFERENT VIEW OF MANAGEMENT ACCOUNTING IN BUSINESS AND EDUCATION 66
Results of a survey taken of academicians and practioners in accounting and IE
By John E. Mansuy

Volume 25, No. 3 March 1993

FEATURES

INDUSTRIAL ENGINEERS HELP QUALITY SHINE THROUGH AT REYNOLDS METALS 14
A company profile of Reynolds Metals and their use of industrial engineers
By Sonja Lee

U.S. REPEATING ARMS SETS SIGHTS ON WORLD-CLASS FACILITY 30
A new plant is part of a plan to make Winchester firearms a world leader in the sporting arms industry
By Gary A. Ferguson

FAIRTRON SCORES BIG WITH NEW CABINET PRODUCTION LAYOUT REDESIGN 34
Scoreboard manufacturer uses computer-aided relationship planning techniques to design plant
By Dave Sly and Emil Polashek

DEVELOP STANDARD OPERATING PROCEDURES IN WAREHOUSING AND MANUFACTURING 38
SOPs can form a base for developing detailed training programs
By Dennis Griffith

REDESIGNING THE FACILITY DEVELOPMENT PROCESS 42
A facility's impact on productivity and new products time to market and break-even point must be recognized
By David Rowe

KITTING ELIMINATION SUPPORTS JUST-IN-TIME PRINCIPLES 46
JIT advantages can offset the disadvantages that kitting elimination can bring
By Roy Henderson and Ali S. Kiran

TIME MANAGEMENT HELPS FIRST-LINE MAINTENANCE SUPERVISORS HANDLE PRESSURES 50
By organizing and planning, supervisors can gain control of their time
By Terrance J. Kotnour

FITTING THE WORKPLACE TO THE HUMAN AND NOT VICE VERSA 56
Ideas for incorporating ergonomic design into the workplace
By K. H. E. Kroemer

WORKING TOWARDS AN EMPOWERED AMERICA FOR ALL 62
The Americans with Disabilities Act is a legal mandate for full equality of people with disabilities in every aspect of public society
By Justin Dart

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 4
April 1993

Contents

Articles

14 **The Hague: Giving Infrastructure a Spectacular Face Lift**
By Rik de Groot
The Hague, The Netherlands, site of ITE's 63rd Annual Meeting, is undergoing some extensive changes to make the city more accessible and more beautiful.

19 **An Operational Comparison of the Single-Point Urban and Tight-Diamond Interchanges**
By Brian C. Fowler
The relative performance of these interchanges is highly dependent on the characteristics of the intersecting movements.

26 **Trip Generation Comparisons of Club Warehouse Stores**
By Wes Guckert
A study indicates that club warehouse stores generate traffic volumes nearly 50 percent lower than other normal retail facilities.

29 **Precollege Education Programs for Transportation Engineers**
By Hernan E. Pena Jr
Established programs and organizations that promote science and engineering provide the perfect opportunity for engineers at the local level to become involved in promoting the transportation profession.

33 **Transportation Engineering Textbook Needs**
By ITE Technical Council Committee 2-39
Based on the results of a survey in Canada and the United States, a prioritized list of textbook needs and suggested authors in transportation engineering was developed.

41 **An Overview of Road Safety in New Zealand**
By Khair S. Jadaan
This article discusses the components of road accidents, compares road safety parameters with other countries and explores strategies to improve safety performance on New Zealand roads.

News

12 **Washington Report**
Clinton Economic Plan • ISTEA Planning

13 **ITE News**
TDM Advisory Committee

38 **1993 Call for Papers**

JOURNAL OF TRANSPORT ECONOMICS AND POLICY

Density of Residential Land Use and the Impact of Airport Noise
Dean Uyeno, Stanley W. Hamilton, and Andrew J. Biggs

Railway Costs and Productivity Growth — Harry McGeehan

Optimal Public Transport Price and Service Frequency — Kjell Jansson

Modelling Vehicle Ownership and Use in Low Income Countries
Kenneth Button, Ndoh Ngoe and John Hine

Fare Evasion as a Result of Expected Utility Maximisation — Peter Kooreman

Developments in Transport Policy

Economic Reform and Transport Policy in China — John H. E. Taplin

Notes and Comments

Demand Elasticities: A Comment — Joyce M. Dargay

Road Congestion Pricing: When is it a Good Policy?
A Comment — Peter Hills
A Rejoinder — Andrew W. Evans

Abstracts of all main articles are given in English, German, French and Spanish

Volume XXVII No. 1 — January 1993

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 3
March 1993

Contents

Articles

17 **Vehicle Offtracking: A Globally Stable Solution**
By Graham S. Gurlick, Darius N. Kanga, and Garv Glenn Miller
The Ministry of Transportation and Highways adopted Pathtracker as its design tool for assessing offtracking capabilities on Canada's roadways.

23 **Service Station Trip Generation**
By James H. Kawamura
A major goal of this study was to determine appropriate trip generation rates for service stations of varying designs.

29 **Geographic Dimensions of Travel Reduction Ordinances**
By Ali Modarres
In response to recent clean air legislation, many government entities are examining ordinances across the country already in operation. This study provides an alternative perspective on the effectiveness of one such regulation and possible remedies for its shortcomings.

35 **Good Management: Minimizing Conflict in Parking Lots**
By Wen Long Yue and William Young
The development of procedures to quantify the performance of parking lots is long overdue, but many measures for overall performance are available.

42 **The Age and Status of Transportation Planning Databases**
By ITE Technical Council Committee 6F-42
The committee's main objective was to document the age and status of data being used in areawide transportation studies, and the material presented summarizes the results.

News

11 **Washington Report**
Conformity Rules • Conditions and Performance • ITE, Clinton and Transportation Funding

13 **Nominating Committee Announcement**

Journal of
Structural Engineering
Volume 119 Number 3 March 1993

Technical Papers

Fall of a Temple: Theory of Contact Applied to Masonry Joints.
Franz-Josef Ulm and Jean Michel Piau 687

Joint Effects on Behavior of Transmission Towers
G. M. S. Knight and A. R. Santhakumar 698

Optimum Design of Three-Dimensional Framework Structures
Tom Lassen 713

Shear Behavior of RC Structural Walls
Vincenzo Colotti 728

Experimental Study of Behavior of Composite Space Trusses.
A. I. El-Sheikh and R. E. McConnel 747

Eccentrically Connected Cleat Plates in Compression
S. Kitipornchai, F. G. A. Al-Bermani, and N. R. Murray 767

Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports.
C. M. Wang, Y. Xiang, S. Kitipornchai, and K. M. Liew 782

Multiobjective Optimization of Prestressed Concrete Structures.
Z. Lounis and M. Z. Cohn 794

Moment-Curvature Relationships for Dented Tubular Sections.
L. Duan, J. T. Loh, and W. F. Chen 809

Postbuckling and Hysteresis Models of Open-Web Girders.
Jeng-Fuh Ger and Franklin Y. Cheng 831

Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake.
Jeng-Fuh Ger, Franklin Y. Cheng, and Le-Wu Lu 852

Direct Analysis of Slender Columns with P-Delta Effects
J. Y. Richard Yen 871

Strength of New Heat Treated Window Glass Lites and Laminated Glass Units.
H. Scott Norville, Paul M. Bove, Darrel L. Sheridan, and Stacey L. Lawrence 891

Simple Model for Optimal Control of Tall Buildings.
Henry T. Y. Yang, D. G. Liaw, D. S. Hsu, and H. C. Fu 902

Load Distribution in Multibeam Precast Pretopped Prestressed Bridges.
Alfred G. Bishara and Roesdiman Soegiarso 920

Effective Flange Width for Stress-Laminated T-System Timber Bridges.
J. F. Davalos and H. A. Salim 938

Theory and History of Suspension Bridge Design from 1823 to 1940
Stephen G. Buonopane and David P. Billington 954

Postcompression and Superimposed Trusses for Bridge Rehabilitation
S. M. Planck, F. W. Klaiber, and K. F. Dunker 978

Discussions

Wind Loads On Buildings with Sawtooth Roofs. Patrick J. Saathoff and Theodore Stathopoulos
By C. N. Srinivasan and C. R. Arvind.
Closure by authors 994

Viscoplastic Response of Clamped Beams under Impact Loading. John F. Carney III and Chiwang Yeh.
By Herbert L. Bill Jr. and Mostafiz R. Chowdhury.
Closure by authors 996

Analytical Moment-Curvature Relations for Tied Concrete Columns. Shamim A. Sheikh and C. C. Yeh.
By Juan Carlos Molano Toro.
Closure by Shamim A. Sheikh 999

Book Review 1001

Reviewers of the *Journal of Structural Engineering* 1003

Journal of
Structural Engineering
Volume 119 Number 4 April 1993

Technical Papers

Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design.
Kazuhiko Kawashima, Shigeki Unjoh, and Meguru Tunomoto 1015

Lateral Load Distribution in Asymmetrical Tall Building Structures
Alex Coull and A. F. Abdul Wahab 1032

Finite Element Method for Buckling Analysis of Plate Structures
Chee-Kiong Chin, Faris G. A. Al-Bermani, and Sritawat Kitipornchai 1048

Reliability-Based Optimization of Series Systems of Parallel Systems.
Ib Enevoldsen and John D. Sørensen 1069

Composite Profiled Beams.
Deric John Oehlers 1085

Why Direct Tension Test Specimens Break Flexing to the Side.
Zdeněk P. Bažant and Luigi Cedolin 1101

Approximate Moment-Curvature Relationships for Slender Columns.
Anibal A. Manzelli and Issam E. Harik 1114

Prismatic and Nonprismatic Slender Columns and Bridge Piers.
Anibal A. Manzelli and I. E. Harik 1133

Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems
Kinh H. Ha 1150

Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension.
Yoshiaki Goto, Makoto Obata, Hirofumi Maeno, and Yoichi Kobayashi 1168

Seismic Response of Eccentrically Braced Tall Building.
Mehmet Çelebi 1188

Uniaxial Bending of Columns.
A. Najmi and A. Tayem 1206

Applications of Viscoelastic Dampers to High-Rise Buildings.
C. S. Tsai and H. H. Lee 1222

Behavior of Two-Span Continuous Bridge under Truck Axle Loading
Jane L. Tiedeman, Pedro Albrecht, and Lloyd R. Cayes 1234

Public Safety—Is It Compromised by New LRFD Design Standards?
Frank J. Heger 1251

Composite Beam-Columns with Interlayer Slip—Exact Analysis.
Ulf Arne Girhammar and Vijaya K. A. Gopu 1265

Experimental Study of Timber Trusses and Joints.
H. C. Foo 1283

Minimum-Weight Design of Continuous Composite Girders.
Mitsuru Ito and Theodore V. Galambos 1297

Discussion

Shaking-Table Study of Base Isolation for Masonry Buildings. T. J. Paulson, D. P. Abrams, and R. L. Maves.
By H. B. Day and G. S. Stranaghan. Closure by authors 1314

Journal of

Transportation Engineering

Volume 119 Number 2 March/April 1993

EDITORIAL vii

SPECIAL SECTION: HAZARDOUS MATERIALS TRANSPORTATION

Hazmat Transport Risks: Societal and Individual Perspectives.
F. F. Saccomanno and J. H. Shortreed 177

Procedure for Developing Truck Accident and Release Rates for Hazmat Routing.
Douglas W. Harwood, John G. Viner, and Eugene R. Russell 189

Computer-Assisted Routing of Dangerous Goods for Haute-Normandie.
Sylvain Lassarre, Kurt Fedra, and Elisabeth Weigkricht 200

Rating Countermeasures for Mitigation of Hazardous Materials Incidents.
Eugene R. Russell Sr. 211

Characteristics of Hazardous-Material Accidents in Pennsylvania.
Antoine G. Hobeika, Sigon Kim, and Raja Sethuraman 226

TECHNICAL PAPERS

Transportation Hazard Analysis in Integrated GIS Environment.
Mark Lepofsky, Mark Abkowitz, and Paul Cheng 239

Reliability-Based Design of Intergreen Interval at Traffic Signals.
Said M. Easa 255

Effect of Vehicle Length on Passing Operations.
Gordon A. Sparks, Russell D. Neudorf, John B. L. Robinson, and Don Good 272

Field Evaluation of Preformed Membranes.
Imad L. Al-Qadi, Richard E. Weyers, and Phillip D. Cady 284

Analyses of Canadian Air Travel Demands.
Bruce G. Hutchinson 301

JANE'S
Airport REVIEW
Incorporating Aviation Ground Equipment Market

ISSN 0954 76 49 MARCH 1993

News

2 China plans to double the number of eastern region airports, Bristol/Filton is to go commercial, Singapore strengthens maintenance hub drive, the lack of smaller long-range alternatives to the 747 are hampering trans-Pacific growth, and will Ipswich Airport finally close?
3 Asian airlines are urged to fight 'open skies', and Mongolia is planning to expand Ulan Bator airport
4 FAA Report

Business

6 A round-up of contracts and business developments.

Airports

9 Small and remote, the Seychelles has grand ambitions to become a strategic Indian Ocean hub.

ATC

15 The ATC '93 conference concludes no short-term solutions to Europe's ATC congestion problems
16 TCAS' safety record comes under fire from air traffic controllers

Equipment

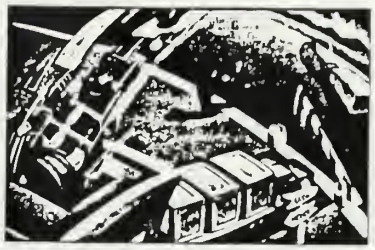
19 New legislation is looming to regulate the actual brilliancy of runway lighting.
23 Increased sophistication and ever-changing regulations make fire trucks such an expensive commodity that airports are beginning to warm to leasing options
25 A Buyer's Guide to Cargo Handling Equipment
33 A round-up of new products on display at ATC '93 in Maastricht.

The American Management Association Magazine MARCH 1993

Management Review

Cover Story:

10 INTERNATIONAL
Mexican Miracle: How the U.S. Can Profit From NAFTA Two-way trade across the Rio Grande is expected to increase once the North American Free Trade Agreement is ratified. Are you positioned to take advantage of Mexico's growing market?



COVER ILLUSTRATION DAVE JOLY

FEATURES

12 INTERNATIONAL
It's Time to Set the Record Straight Information and misinformation are shaping the debate on NAFTA. Here, *Management Review* debunks 12 popular myths about the free trade agreement.

19 INTERNATIONAL
Maquiladoras: Where Quality Is a Way of Life Mexico's border facilities no longer do just basic assembly work. Today, maquiladora managers are proving that Japanese and American management techniques, coupled with Mexican labor, can create an atmosphere of total quality and empowerment.

45 TEAMWORK
FlyingFox: A Manager's Tale—Part II Just when it looks like there's no hope that the cross-functional team will meet its deadline, a solution comes from an unlikely source. Excerpted from the recently published AMACOM business novel.

49 CASE STUDY
When 99 Percent Isn't Enough Four Seasons has begun operations in Japan. How will the customer service that made the hotel chain famous in the West translate to the East?

35 INSURANCE
Group Life Insurance—A Blessing or a Curse? Enthusiasm for group life insurance among employers has begun to taper off because, despite the benefits, it can be costly. Is there a better way to go?

40 QUALITY
Results-Driven Quality...Now! TQM is in danger of becoming just another management fad. Why not reinvest those process-oriented efforts into something more results-oriented.

53 MARKETING
Ambush Marketing: Heading Them Off at the Pass There are big bucks associated with sponsorship of mega sporting events like the Olympics or the Super Bowl. But advertisers are getting increasingly wary of being ambushed by competitors. What's a sponsor to do?

DEPARTMENTS

1 EDITOR'S NOTE
Fiction versus fact about what the North American Free Trade Agreement will and will not accomplish.

2 MEMO FOR MEMBERS
The myriad cultural mores of the countries in which we do business may be in conflict in this rapidly shrinking business world. How do our business ethics hold up in an ever-changing environment?

5 FRONT LINES
What Des Moines, Iowa, has to offer....Security firm attains 100 percent drug-tested workforce....Buyouts make a comeback....Educational bartering....Rosabeth Moss Kanter on customer service.

7 LETTERS

24 FACE TO FACE
Jose Collazo, chairman and CEO of Infonet Services Corporation, shares his insights regarding strategic alliances.

27 IN PRACTICE
Marketing high-tech products and services calls for a different kind of approach than that used by traditional consumer products companies.

30 DC PERSPECTIVE
What's the future of America's international economic policy?

33 LEGAL BRIEFS
Will your valuable trade secrets walk out the door when an employee leaves the company?



58 CUTTING EDGE
Managers need to think strategy when they think quality. In doing so, quality becomes a richer, more powerful concept.

61 RESOURCES
From Stalin to Sitting Bull—some unlikely sources of management wisdom.

The American Management Association Magazine

Management Review

APRIL 1993

Cover Story:

10 INTERNATIONAL

A Brave New World: Managing International Careers Innovative companies are beginning to look at their overseas assignments in a new light—learning that effectively managing their international employees can have a big impact on the company's bottom line.



COVER PHOTO CHARLES SEESELBERG

FEATURES

16 STRATEGY
Restructuring: How to Get It Right Downsizing in itself is not the magic elixir to cutting costs. There must be a broader corporate strategy for cost-savings that includes clearly defined goals. Here are six principles of cost management.

22 CUSTOMER SERVICE
Managing Customer Satisfaction for Profit As customer satisfaction becomes more critical for companies in the heat of competition, savvy businesses are devising innovative ways to gain new customers as well as nurture the old ones.

44 TEAMWORK
FlyingFox: A Manager's Tale In the third and final excerpt of this business novel, the FlyingFox team grapples with a serious software problem. Learn how the group uses teamwork to resolve a seemingly hopeless situation.

58 DECISION MAKING
Decisions, Decisions...First, Get the Facts So you've made what you consider a great decision. That's only half the battle. A decision made intuitively is hard to sell and even harder to defend. Learn a simple way to make decisions based on facts, using a logical model.

50 MARKETING
Power Centers: The New Face of Retailing Witness the slow evolution of the mall—which epitomized retailing in the '70s and '80s—to shopping centers that now emphasize "big" and "bargain."

54 LABOR
Employee Committee or Labor Union? What's legal and what's not in setting up an employee participation program? A recent NLRB ruling provides employers with hazy guidelines.



DEPARTMENTS

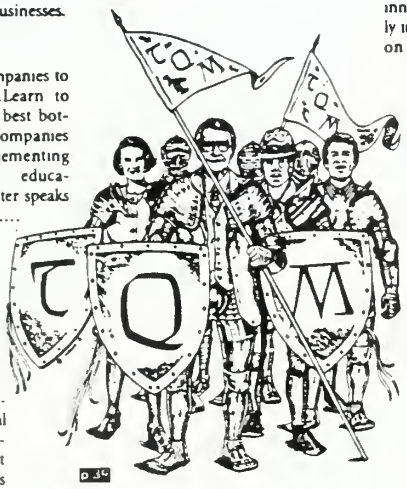
1 EDITOR'S NOTE
It will take more than just programs to give a boost to our ailing education system. Commitment and action from individual people are the keys.

2 MEMO FOR MEMBERS
A quiet transformation has been taking place in Southeast Asia. And abundant opportunities have opened up for American businesses.

5 FRONT LINES
What are the 100 best companies to work for in America?...Learn to manage diversity for the best bottom-line results....Are companies really successful at implementing change?...Bartering for education....Rosabeth Moss Kanter speaks out on customer service....Do computers pose a threat to personal privacy?...What is your company doing to celebrate National Employee Health and Fitness Day?

25 DC PERSPECTIVE
Washington begins to rethink its environmental agenda—from one that focuses on after-the-fact cleanup to one that offers incentives and anticipates future needs.

28 LEGAL BRIEFS
As downsizing has becomes a way of life for American business, there is an increasing need to focus on an overlooked downside—employee morale—and the host of legal issues surrounding it.



33 FACE TO FACE
The director of the Pennsylvania Intergovernmental Cooperation Authority in Philadelphia speaks out on the state of our nation's cities and what local and national governments can do.

36 IN PRACTICE
A look at European and American innovation in the area of work-family initiatives. There's a lot happening on both sides of the Atlantic.

39 CUTTING EDGE
They are deceptively simple at first glance, but these three steps to total quality demand great courage and fortitude on the part of management. That's why so few companies have attempted them.

MBE
Minority • Business • Entrepreneur

March/April 1993

4 Man in the Middle—Investment banker Bernard Beal bridges the capital gap.

14 Different Drummers—These innovators create their own rhythms of success.

24 Rising Star—Maryland Congressman Kweisi Mfume brings new leadership to the Congressional Black Caucus.

32 New Ties—The 1990s will foster innovative relationships between small businesses and the private sector.

43 Raising the Bar—Washington Gas elevates its standard of excellence by seeking out minority and women suppliers in "nontraditional" areas.

45 Layin' Down the Line—Expanding the supply of natural gas to the Northwest and California provides new opportunities for minority and women contractors.

52 After the Storm—Florida Power & Light called on minority contractors to help pick up the pieces in Hurricane Andrew's wake.

56 Changing for Tomorrow—TU Electric helps a small ad agency achieve its potential.

mlr

Monthly Labor Review

March 1993
Volume 116, Number 3

Deborah P. Klein, *Editor-in-Chief*
Robert W. Fisher, *Executive Editor*

3 **International comparisons of unemployment indicators**
Seven unemployment indicators reveal major labor market differences in North America, Europe, and Japan
Constance Sorrentino

25 **Factors affecting retirement income**
Today's Americans are retiring earlier and living longer yet these changes are not always reflected in the design of retirement benefits
William J. Wiatrowski

36 **Effect of updated weights on Producer Price Indexes**
Data now reflect 1987 rather than 1982 shipment values; major weight shifts are attributable to a broad economic recovery and increased oil production
Roger Burns, Harry Briggs, and William Thomas

MODERN STEEL CONSTRUCTION

March 1993

NSCC FEATURES

18 EXPOSED STEEL FRAME CREATES ARCHITECTURAL EXCITEMENT
New developments in fire safety analysis allowed the developer of a 45-story Olympic hotel to utilize a steel exoskelaton

30 DESIGNING ARCHITECTURALLY EXPOSED STEEL TUBES
An in-depth examination of bending and connection requirements for engineers and fabricators

40 JOINTLESS REDECKING OF SIMPLE-SPAN STRINGERS
Elimination of unnecessary roadway expansion joints can often be accomplished without major structural rehabilitation

47 REDUCING PARKING STRUCTURE COSTS
Parking structures framed with composite girders supporting a double tee deck system can reduce costs by 12% to 15%

52 STEEL CONSTRUCTION ACCIDENTS
Incorrect design or construction procedures can have fatal consequences

NEWS AND DEPARTMENTS

6 EDITORIAL

9 STEEL INTERCHANGE
- Stainless Steel Bolts
- Curved Beams
- Jib Cranes
- Bending Wide Flange Beams
- New Questions

11 STEEL CALENDAR
- New Ideas In Structural Steel Lecture Series

58 NSCC EXHIBITORS AND PRODUCTS

66 STEEL MARKETPLACE

METRO Magazine

a bobit publication — serving surface mass transportation for 80 years

MARCH / APRIL 1993

Vol 80 No 2

Features

Is the Diesel Bus Engine Dead? 15
New government standards make it more difficult for motorcoach and transit operators to hang onto diesel engines. The irony is that diesel can be made cleaner and more cost effective

The Passengers Are in Charge of Maryland Commuter Rail 24
MARC stations overhauled, coach purchases due. The result of these improvements is steady ridership increases.

New System Hurdles Local Bureaucracy 26
Santa Fe was one of the last state capitals without public transit. Now, armed with a dedicated revenue source, the agency is poised to serve the city's multicultural, upscale residents

How to Keep Your Coaches Full 28
UBOA/ABA Miami convention gets an easy formula. It can be summarized in one word: service.

Battery Power Considered for Bus Fleet 34
Torrance (CA) Transit pressured to trim pollutants. Meanwhile, the Los Angeles-area operator has successfully expanded service to affluent neighborhoods.

To Get Foreigners on Your Coaches, Go After Them Where They Live 36
Operators told to market overseas, make deals—and watch out for foreign competitors in their own marketplace.

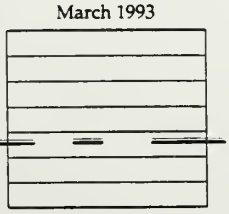
Intercity, Rural Bus Worker Pay Tops That of Charter Workers 39
Private coach wages are barometer of nation's economy. Example: workers' wages grew rapidly in the 1970s, then remained flat in the 1980s.

AVL Makes Operations Run Smoothly 41
Satellite technology useful for transit bus, rail, motorcoach. But will this be another expensive toy or vital to passenger service?

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON MA 02116

New England Economic Indicators

March 1993



Federal Reserve Bank of Boston

The Massachusetts Municipal Association

MunicipalAdvocate

Volume 12 Number 3

Prospects for Local Option Taxes in the 1990s
By Daphne A. Kenyon and Bruce Wallin
When Boston Mayor Raymond Flynn called for local option taxes, he was saying in public what others have discussed more quietly. But what would be the impact of these revenue sources on us, our budgets, and our local economies? 10

Interactive Government: Creating Partnerships Between Municipalities and Schools
By creating partnerships between local government and the public schools, we can encourage citizens to become involved in community affairs 16

Cable Television and Changing Local Regulations
By Joseph Van Eaton and Nicholas P. Miller
The new federal law on cable television was designed to protect consumers. Will the new law really help consumers and local governments? 20

***Strategies:* Is Privatization the Way to Go? The Case of Municipal Electric Companies**
By Patrick Hyland 27

***Law:* Cable Television: Local Bylaws Preempted**
By Leonard Kopelman and William Hewig 34

April 1993
Vol. 32, No. 4

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES

20 **INDUSTRY FORUM — NPA '93: The Best Convention in the Best Convention City**
Rich Parker
Convention chairmen discuss why this event benefits the parking industry

23 **Boring Boilerplate Can Cost You $$$$**
Robert N. Sacks, Esq.
Why it's important to know what's in the last five pages of a lease

27 **NPA '93 — Managing the Future — 42nd Annual Convention Program**
The New Orleans convention blends an information-packed business program for both private parking operators and public parking administrators, gala social events, and an expanded trade exposition into a complete information and entertainment package. This special section provides the exciting details, registration information and a close-up look at New Orleans.



44 **Access Board Proposes Modifying ADAAG**
Mary S. Smith
Public entities would be required to meet ADAAG not UFAS requirements

49 **Walter Kordiuk: Canadian Parking's Music Man**
Lou Cook
Playing music taught him a lesson that's paid off in his business career



Railway Age

April 1993

33 Rebuilding: How big a role for intermodal?
Intermodal's potential won't be realized until railroads can shake the not-invented-here syndrome

39 Mexico: The road to intermodal
For intermodal to grow, crippling customs and communications barriers will have to be torn down

47 Dockside yards spur Tacoma growth
The Port of Tacoma is emerging as a formidable force in container traffic

55 The quest for quality cars: Improved components
There are no easy answers, but suppliers are working on better technologies

65 Virginia Railway Express: A model commuter road
VRE, the "new kid on the block," is fast becoming "old reliable."

71 What next in bargaining?
The presidents of the BLE and UTU speak out with frank—and surprising—comments

75 Sale-leaseback pays off
Benefits accrued to both sides when Koppers sold its tank cars to UTC, then leased them back

13 Rail Update
Railroader of the Year; highway subsidies; Conrail service networks; BN's Autostack and a.c. locos; CN and J. B. Hunt; SmartStart; APC/AEI.

29 Transit Update
A new TGV line for France; transit's safety record; Metra's ontime performance; suspended light rail for Milwaukee; Metro Link construction progress

COMMENTARY

4 Inside
9 Watching Washington
10 Lines on Labor
12 Financially Speaking
100 In Transit

PLANNING CONTENTS

American Planning Association Vol. 59, No. 4 April 1993



9 **It's the Economy, Stupid.** With the economy at a standstill, says Dave Roeder, Chicago planners have made jobs a top priority.

16 **In (and Out) of the Loop.** Dennis McClendon makes the circuit of downtown projects.

18 **Play It Again, Dan.** The legacy of Daniel Burnham's 1909 plan for Chicago. By Jim Krohe.

23 **The Bank with a Heart.** Sylvia Lewis describes a Chicago bank with a 20-year record of financing community development projects. Part of *Planning*'s yearlong series on "America's Cities: What Works."

29 **Neotrad Meet the Midwest.** Ruth Knack finds that gazebos are a hard sell.

5 **From the Capitals**
7 **APA News**
33 **News**
Minneapolis debates bank site; new plan for Israel.
35 **Letters**
Pine Barrens; California housing.
37 **Planners Library**
Significance of race.
40 **From the Board**
Students' role.
41 **Commissioners Memo**
West Virginia freehold law
42 **Members in the News**
43 **Conference Calendar**
43 **Consultant Directory**
50 **In the Works**
Northeastern Illinois greenways plan.

PLANNING CONTENTS

American Planning Association Vol. 59, No. 3 March 199

9 **1993 Planning Awards**

10 **Guidelines and Study for Reurbanisation of Metropolitan Toronto.** Comprehensive planning by a large jurisdiction.

12 **Gila River Indian Community Public Participation Program.** Comprehensive planning by a small jurisdiction

13 **Oregon Transportation Planning Rule.** Planning implementation by a large jurisdiction

13 **Chicago Arts District.** Special citation, planning implementation.

14 **San Rafael Hillside Residential Design Guidelines Manual.** Planning implementation by a small jurisdiction.

15 **Mission Bay Environmental Impact Report.** Current topic award

16 **Kramer-Anacostia Planning Project.** Public education award

16 **Kathryn Bloomberg.** Distinguisheo leadership by an elected official.

17 **Howard Grossman.** Distinguished leadership by a planner

18 **Msgr. William J. Linder.** Paul Davidoff Award.

19 **Carol Barrett.** Distinguished service.

19 **Planning and Women Division.** Division improvement

20 **North Carolina.** Chapter achievement: overall program

20 **Colorado Chapter.** Chapter achievement: specific project.

20 **New Mexico.** Chapter improvement

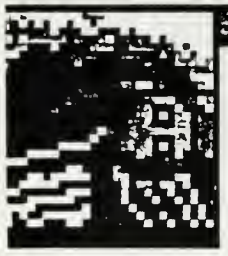
21 **AICP Awards**

24 **Journalism Awards**

5 **From the Capitals**
7 **APA News**
Friends in high places
27 **1992 Annual Report**
35 **News**
California growth plan; Twin Cities highway
37 **Letters**
Kill that myth.
38 **Planners Library**
Pinelands, trusts
40 **From the Board**
Election procedures, a debate
42 **Members in the News**
43 **Conference Calendar**
43 **Consultant Directory**
50 **Viewpoint**
Advice for HUD

PCComputing

APRIL 1993 VOLUME 6, NUMBER 4



Cover Story

110 A Better Windows Than Windows

BARRY SIMON

Blast through Windows performance barriers with 55 add-ins! Discover how to combat the everyday sluggishness you encounter in Windows tasks, from managing files and launching programs to switching tasks with third-party utilities. Our experts advise you on which utilities to collect so that you end up with a better Windows than Windows.

149 Power-Packed Spreadsheet Secrets

CRAIG STINSON

You made the switch to a Windows spreadsheet because it promised to be more powerful and easier to use—now tap the hidden power of Excel 4.0, Quattro Pro for Windows, and 1-2-3 for Windows! Here you'll find the best tips to help automate and accelerate your way to Windows spreadsheet mastery.

184 Communications Get Graphical: Nine Windows Solutions

JOE SALEMI

Still relying on your faithful old DOS-based communications program? At last, Windows communications software provides streamlined performance, smooth multitasking, and reliable functioning. We stress-test nine Windows programs so you can decide if it's time to switch.

News

36 **Adobe Photoshop 2.5 for Windows** Take a guided tour through the hot features of the new Windows version of this image-processing software

40 **Insight's 486DX2-66MHz VESA VL-Bus Multimedia System**

40 **Plustek's ScanPlus Color 6000**

44 **Canon's BJC-800**

46 **Tektronix's Phaser 200i**

48 **Traveling Software's LapLink V**

48 **SoftLogic Solutions' Software Carousel**

58 **Software Publishing's Superbase**

58 **Sonera's DisplayMate Professional**

60 **Folio's Folio Views 3.0 for Windows**

60 **Design Science's MathType**

60 **Micro Solutions' Backpack Parallel Port CD-ROM Drive**

65 **Olivetti's Quaderno**

66 **Laser Printer Accessories' doubleRes 4**

66 **Myriad Enterprises' PrintSprint 600**

66 **MicroHelp's FM Tools and Uninstaller**

70 **American Small Business Computers' DesignCAD 6.0**

70 **Tadpole's SPARCbook 2**

72 **Media Vision's Fusion CD 16**

72 **Extended Systems' PocketPrintServer**

78 **PC/C Update** Clipper 5.2, Kinesis Ergonomic Keyboard, product upgrades, and short takes on the unusual

84 **Best Bets** A once-in-a-millenium spreadsheet and database deal

86 **Software Salesmen**



PAGE 40 INSIGHT'S MULTIMEDIA MACHINE

208 Techniques of the OS/2 Masters

ED BOTT AND JOHN DVORAK

Unleash OS/2's power on your desktop! We ask two OS/2 aficionados to answer your most frequently asked questions. Learn their favorite tricks and techniques for customizing and navigating this potent operating system.

218 Consultant's Notebook: 10 Expert Tips For Buying a Network Server

WILLIAM BEEM

Bring an expert along when you buy the brains of your network. We demystify the choices available and arm you with a critical checklist for buying the perfect server.

228 Face-Off: 386Max vs. QEMM-386

DAN GOOKIN

Get a front row seat for the championship bout between 386Max and QEMM-386! Both have the memory-management muscle to free up megabytes of memory, but which package packs the definitive punch?

Columns

20 **Ed Bott** Insider tips for the 1993 Software Derby

27 **Letters** The battle over MIS credibility, Bob Vila's "old" PC, plus more debate on OSs

90 **John C. Dvorak** The hot stories of 1993—readers want the scoop

92 **Gil Schwartz** Journey to the center of the box with our business wonk

96 **John Dickinson** How IBM can rescue itself from the abyss

100 **Dvorak vs. Somerson** Why do so few users back up their data?

332 **Penn Jillette** An apology for last year's trick

Help

250 **DOS** Work smarter with floppy disks

251 **DOS Hot Tips** Double-duty floppy drives

256 **Windows** Quick-print from File Manager

258 **Windows Hot Tips** Print without fonts onboard

262 **Software Secrets** Expert advice on popular apps

280 **Hardware Hints** Optimize PC performance

284 **How It Works** Radio-wave networking

286 **Q&A** Authoritative answers to your most pressing PC questions

289 **Fast Facts** Using extended TrueType characters

296 **Networking Smarter** Expert advice for your network

252 **This Month's Free Software** Access PC/Contact, our online service



PAGE 284 HOW IT WORKS RADIO-WAVE NETWORKS

RAILWAY GAZETTE INTERNATIONAL

CONTENTS

VOLUME 149 NUMBER 3
MARCH 1993

SNCF TACKLES THE BIG ISSUES 143
General Manager Jean-Francois Benard is confident that public opinion will support SNCF as it campaigns for road transport to play by the same rules as rail

SOCRATE AIMS TO FELL THE TRAINS 144

SNCF RIDES THE INVESTMENT TIDE 146

RESEARCH DETERMINES SUPER-TGV FORMULA 151
Engineering challenges face the research teams looking at a Super-TGV running in commercial service at 350 km/h. A research programme funded by SNCF, GEC Alsthom and the French government has already set the fundamental design principles for this train of the future

AUTOROUTE FERROVIAIRE EXPANDS THE INTERMODAL CONCEPT 159
Studies have confirmed the feasibility of France's ambitious plan for a lorry motorway on rails, an idea that has already enthused politicians

PARIS PUTS RAIL INTO ORBIT 163
As well as enhancing capacity on radial routes and within central Paris, strategic plans for the Ile de France envisage a series of orbital lines

SATELLITES TRACK THE TRAINS 171
Richard Hope reports on trials in China, Russia and Australia which demonstrated the economy and effectiveness of Inmarsat communications as voice and data links, global positioning is a useful add-on with both commercial and safety potential

GREEN LINE ATO BUILDS ON TRIED TECHNOLOGY 177
Services are due to begin next year on the 32 km east-west line linking Norwalk to Los Angeles International Airport. Initially planned as light rail, the elevated Green line is now being equipped as a fully-automated mini-metro

HEADLINES

Funds agreed to build shorter TGV Est

ON FEBRUARY 10 the French government announced a financing formula for the TGV Est project. To ensure that a Fr20bn ceiling placed on the scheme last December is not breached, the length of new line has been trimmed from the 410 km originally proposed to around 300 km. This will take it to Baudrecourt, about 15 km beyond Metz on the line to Sarrebourg, rather than to the city gates of Strasbourg.

The government will provide Fr3 5bn, and the *regions* of Alsace, Lorraine and Champagne-Ardenne will together contribute a similar sum. A further Fr2 5bn will be funded by the European Community, and contributions of Fr1bn are being sought from Ile de France and Luxembourg. This will leave SNCF to find the rest through low-interest loans guaranteed by the government.

Studies completed by former SNCF President Philippe Essig in 1992 envisaged that TGV Est would be built for a maximum speed of 350 km/h. This is still likely, although it will require curves of larger radius than a maximum of 320 km/h. Fastest journey time from Paris to Strasbourg would be around 2 h 20 min, with trains running beyond Baudrecourt over existing tracks to the Alsace capital. The new line may be extended later to include a tunnel under the Vosges.

Next step will be signing of a formal funding agreement between SNCF and the government. This will allow legal procedures to start for the *declaration d'utilite publique*, with a view to having the line open by 2000. □

CONTENTS

VOLUME 149 NUMBER 4
APRIL 1993

JOONDALUP LINE COMPLETES PERTH'S SUBURBAN RENEWAL 223
March 7 saw the full opening of Perth's Joondalup line, together with introduction of an integrated rail and bus service. Work is now nearly complete on an extension to Currambine

INVESTMENT TO BRING THE PASSENGERS BACK 231
Decades of declining patronage are set to be reversed as Australia's state railways order new and upgraded rolling stock

Xplorers ready to roll 231
XPT sleepers 232
Sprinters face uncertainty 232
CityRail Endeavours 233
QR's three-phase EMUs 234

CLYDE ROLLS OUT HEAVY HAULERS 237
Three builds of freight loco are taking shape at Clyde Engineering's Bathurst works: electrics for QR and diesels for AN and SRA NSW

MERCHANDISE FREIGHT CAN BE PROFITABLE 241
New Zealand Railways' freight business has undergone a remarkable transition. Not only is it profitable, and likely to remain so, but the move to profitability has been achieved with non-bulk freight

SYDNEY HOSTS UITP'S JUBILEE CONGRESS 247

JOURNEY TO THE CENTRE OF THE ALPS 249
Tunnelling through chalk marl under the English Channel was like slicing through cake. Cutting base tunnels under 2 3 km of Swiss rock will be hotter and harder

RADIO LINKS IN THE CHANNEL TUNNEL 255
Communicanons have an important safety role which demands high levels of redundancy and flexibility from four independent radio networks for use within the service and running tunnels

PRODUCT NEWS 259
DIARY 262
PUBLICATIONS 262

HEADLINES

Beijing – Kowloon line under way

FEBRUARY 20 saw the formal start of work on Chinese Railways 2 370 km north-south trunk line from Beijing to Shenzhen. The Ministry of Railways newly-formed Beijing-Kowloon Railway Construction Bureau expects the bulk of the route to be completed by 1995 at a cost of 21bn yuan. Civil engineering work got under way in earnest on the Fuyang – Jiujiang and Tianjin – Baxian sections at the end of January.

The Ministry of Railways announced on February 23 that some 2 320 km of new line will be built this year. The ministry is currently negotiating a US$420m loan from the World Bank to fund electrification of 1 800 route-km, modernisation of track maintenance and introduction of container services on two trunk routes. Other projects include double-tracking of the Lanzhou – Urumqi, Hangzhou – Zhuzhou and Harbin – Manzhouli lines. A 350 km link is to be built from the Shenmu coalfield to Huanghua port in Bohai Bay.

The ministry expects to electrify over 5 000 route-km in the next three years, including the Harbin – Dalian line.

★ CR's Northwest Railway Bureau announced its three-year investment programme on March 2. Costing 7bn yuan, this will see completion of the 498 km Baoji - Zhongwei line by June 1994. Civil works on this single-track electrified route began in 1990, and tracklaying started earlier this year. The Bureau is building a line from Zhongwei to Gantang and electrifying the links from Shuzuishan to Lanzhou and Gantang to Wuwei. □

Railway Age

March 1993

21 Motive power as a competitive tool: A.c. breakthrough on BN?
BN's anticipated purchase of 350 a.c. locomotives may be one of its shrewdest moves

24 A new way to measure rail stress
Herzog engineers have developed an improved methodology to measure rail SFT

25 Rebuilding America's railroads: Roadway for the 21st Century
Improved methods, materials, and machines are needed to handle growing traffic

31 How SEPTA saves time—and money: Meeting the RailWorks challenge
Officials say a difficult shutdown decision has proven a wise choice

37 Giving passenger rail stations form, substance, and image: A primer for station design
The chairman of Harry Weese Associates describes elements of successful design

47 New developments in wayside detection: Defect detectors get smarter
Fine-tuning continues on existing systems as new ones are introduced

53 Better railroading through safer railroading: Safety: "A great investment"
There are many incentives for improving safety. Isn't it time for performance standards?

58 Short lines and regionals: Computerization takes hold
The type of use and pace of growth of computers varies substantially among functional areas

13 Rail Update
Con-Way's retailer contract, APL upgrades customer service, British Rail will split; IC picks CEO; CN to cut back

18 Transit Update
New locomotives for CalTrans; UE&C acquires Gibbs & Hill; LACTC's LRV bids; "Transit Connections"

COMMENTARY

2	Inside	11	Financially Speaking
9	Watching Washington	64	Marketing Advocate
10	Lines on Labor	88	In Transit

Reprographics

Volume 66, Number 4, April 1993

Formerly PLAN & PRINT

Cover Design by Jim Lopez, Visual Magic, Carol Stream, Ill

GIS: The Next CAD?

Geographic Information Systems is a powerful technology not yet fully tapped by architects and engineers. *By Chris Petrakos* Page 8

The Man Behind the Mall

Minnesota's Mall of America was a bonafide fast-track design job for Charles Pigg. *By Kathleen Furore* Page 1

Would Jefferson Appreciate CAD?

Architecture education has come a long way since Monticello. *By Frank Bentayou* Page 2

CONTENTS

APRIL 1993
VOL. 30, NO. 4

TRAINING

THE HUMAN SIDE OF BUSINESS®

FEATURES

BECAUSE IT'S GOOD FOR YOU! BILL CLINTON'S TRAINING TAX 17
By Beverly Geber
Hurrah! Making companies spend 1.5 percent of their payrolls on training would be the best thing ever. Wouldn't it?

ADDED VALUE NEGOTIATING 26
By Karl Albrecht and Steve Albrecht
'Win-win outcome' is easy to say but often hard to pull off. Here's a step-by-step process for building balanced deals.

THE INTRICACIES OF INTERVIEWING 31
By Marc Hequet
Job interviews have always been mine fields, but ADA has made things even more challenging. Here's help.

HOW TO VALIDATE AN ASSESSMENT TOOL 37
By Scott B. Parry
The short answer is 'correlation analysis.' But statistics ain't the half of it.

HIGH SKILLS UNDER THE HOOD 43
By Bob Filipczak
Is anybody really serious about skilling up jobs? Carmakers are. Here's how Ford is teaching tomorrow's mechanics to be high-tech car doctors.

A BLUFFER'S GUIDE TO TQM 48
By Ron Zemke
Everything you need to know about total quality management except how to make it work.

TRAINING'S BIANNUAL REVIEW OF PRODUCTS AND SERVICES 61

DEPARTMENTS

EDITORS' NOTEBOOK 7
Diversity Training As Punishment

TRAINING TODAY 8
Loneliness at the top, self-managed teams, bad report cards and more.

CALENDAR 12

LETTERS 13

BOOKS & FILMS 67

TECH TRENDS 69
The Latest Gizmos at INFOCOMM

TRAINING TERMS 71
Work-Based Learning

INFOCOMM PRODUCT REVIEW 73

SEMINARS & WORKSHOPS 78

FREE INFORMATION 82

CLASSIFIEDS 83

VIEWPOINT 86
The Management Development Package Deal
By Jonathan Brown

CONTENTS

MARCH 1993
VOL. 30, NO. 3

TRAINING

THE HUMAN SIDE OF BUSINESS®

FEATURES

ADAPTIVE TECHNOLOGY FOR THE DISABLED 23
By Bob Filipczak
If a job can be done on a computer, some remarkable new equipment will allow most disabled people to do it. But the question remains, what's a 'reasonable accommodation'?

WHEN WORKERS RATE THE BOSS 31
By Robert McGarvey and Scott Smith
In 'upward-feedback' programs, managers are evaluated by their subordinates. Sounds avant-garde, but it's getting more common every day.

CROSS-TRAINING: THE TACTICAL VIEW 35
By Margaret Kaeter
A company full of employees trained to do a multitude of jobs? Sounds good, but making the idea work requires patience and diligence.

CUSTOMER SERVICE AS A PERFORMING ART 40
By Ron Zemke
If sports provide useful metaphors for teamwork, live theater may offer still better ones for helping us think about a service business.

A TRAINER'S GUIDE TO BUSINESS PROBLEMS 47
By Tom Kramlinger
You've whipped up some lovely ROI projections but management still won't fund your course? Drop the calculator. What you need is a compass.

PEER REVIEW 51
By Dick Grote and Jim Wimberly
At a growing number of companies, employees who have gripes can tell them to coworkers—instead of to lawyers.



Page 31

DEPARTMENTS

EDITORS' NOTEBOOK 8
Positive Thinking

TRAINING TODAY 12
Questions about training, child-care consortiums, choosing a medium and more.

CALENDAR 16

LETTERS 19

BOOKS & FILMS 61

FACTS & FIGURES 64
Defining Levels of Literacy

FREE INFORMATION 66

NEW PRODUCTS & SERVICES 69

SEMINARS & WORKSHOPS 76

CLASSIFIEDS 80

VIEWPOINT 82
'Do Something, Even If It's Wrong'
By Buck Blessing

Vol. 34 No. 3 March 1993 ISSN 0041-0683

Traffic Engineering + Control

Managing Editor
Keith Lumley
Advertisement Director
Michael Stoneham
Production Secretary
Janet Orna

Editorial Advisory Board
A P de Boer
R J Bridle
Professor Sir Colin Buchanan
Thomas B Deen
J A Gaffney
Akira Ishido
J Kleinhout
O F Lambert
Dr M G Lay
Professor Dr-ing. W Leutzbach
Brian V Martin
Professor Adolf D May
Maurice Milne
Alec Silvereisel
Kenneth Summerfield
Professor Celestino Trani
Professor T E H Williams

Editorial Consultants
Professor R E Allsop *Research*
F E K Britton *Paratransit*
J D G F Howe *Developing countries*
K W Hudson *Road safety*
D Bayliss *Public transport*

114 Findings from a GAUDI Zone Access Control field-trial in Barcelona
P Egea Vera, S Hayes and J Burgell

122 Pedestrian ramps in Central Milton Keynes — a case-study
S M Jones and S A Farmer

130 Origin-destination matrices from registration-plate matching
P T Martin and M C Bell

135 A Designer's Handbook on the safety and capacity of road junctions
D I Robertson

136 Transport research at the University of Leeds: Report for 1992
H R Kirby

145 Universities Transport Study Group Silver Jubilee Conference Report
N Hounsell

ROADS® & BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

Vol. 31/No. 4 APRIL 1993

FEATURES

26 *Roofing materials hold promise for pavements*
Roofing shingle additives may offer cost effective means of enhancing performance of HMA pavements

34 *Flexible delineators adapt to new hot seals*
New hot-applied chip seals, asphalt-rubber seals, and polymer modified chip seals force new generation of flexible markers

36 *DOT district: Pennies for project PR*
Shopping mall exhibit, weekly construction updates, and monthly VIP meetings go far in reaching university town residents, firms

38 *Four top grader makers have 92% of market*
New research reveals relative stability in motor grader demand; lesser makers serve niches with unique products

42 *Problematic bridge deck gets thin polymer overlay*
World's largest steel orthotropic deck has continuing problem with wearing surfaces; high-tech polymer overlay selected

44 *Traffic Expo safety's largest show ever*
American Traffic Safety Services Association hosts largest show ever serving traffic safety industry at 1993 annual meeting

48 *Controls boost crane efficiency, precision*
From load moment indicators to electro-hydraulic craning functions, high-tech control systems assist operators

57 *Pittsburgh bridge meet to fost tech transfer*
Bridge design, construction presentations will focus on North Carolina at 10th International Bridge Conference

BULLETIN: At press time, Rodney Slater—commissioner of the Arkansas State Highway and Transportation Department—was to be nominated Federal Highway administrator. Massachusetts' Jane Garvey was nominated deputy administrator. Details next month.

Transportation Research

Volume 27A, No. 2, March 1993 **Part A: Policy and Practice**

Contents

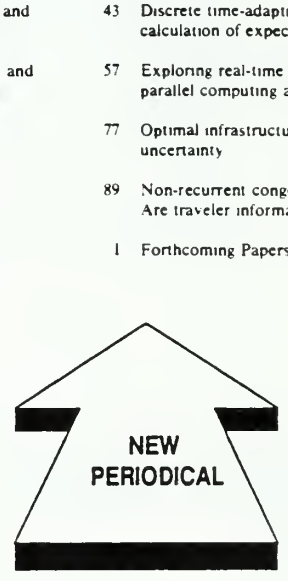
James G. Strathman and Janet R. Hopper	93	Empirical analysis of bus transit on-time performance
Asad J. Khattak, Joseph L. Schofer and Frank S. Koppelman	101	Commuters' enroute diversion and return decisions: Analysis and implications for advanced traveler information systems
James K. Higginson	113	Modeling shipper costs in physical distribution analysis
Genevieve Giuliano, Keith Hwang and Martin Wachs	125	Employee trip reduction in Southern California: First year results
James E. Moore II	139	Ridership and cost on the Long Beach–Los Angeles Blue Line Train

Transportation Research

Volume 1C, No. 1, March 1993 **Part C: Emerging Technologies**

Contents

Stephen G. Ritchie	1	Foreword
Gang-Len Chang, Peng-Kuan Ho, and Chien-Hung Wei	3	A dynamic system-optimum control model for commuting traffic corridors
Yorgos J. Stephanedes and Eil Kwon	23	Adaptive demand-diversion prediction for integrated control of freeway corridors
Michael G. H. Bell and David Brookes	43	Discrete time-adaptive traffic signal control: The calculation of expected delays and stops
Thanavat Junchaya and Gang-Len Chang	57	Exploring real-time traffic simulation with massively parallel computing architecture
Samer Madanat	77	Optimal infrastructure management decisions under uncertainty
Randolph W. Hall	89	Non-recurrent congestion: How big is the problem? Are traveler information systems the solution?
	1	Forthcoming Papers



WATER
Engineering & Management
Vol. 140, No. 4

April 1993

FEATURES

French Project Examines Wastewater Recycling Possibilities

A French company has been examining the recovery and reintroduction of water used by large consumers **18**

Pollution Control Mexicana About to Emerge

Environmental protection activities in Mexico are poised to accelerate as that country begins to deal with the problems **20**

Technology Transfer Via O&M Manuals Helps Egyptians Run Plants

The development of O&M manuals by an American firm for a wastewater construction project in Egypt required special attention to educational and skill levels **22**

Developing Comprehensive Occupational Health Programs

Water and wastewater plant managers must give high priority to understanding the regulations and implementing occupational health programs **26**

Salary Survey

Let us know what you're thinking! Fill out the survey regarding water and wastewater professionals' salaries, job expectations, etc. **35**

CONTENTS

FEATURES

THE TRUTH ABOUT WOMEN'S PAY
A special report on who's getting ahead, who's not, and why.
By Maggie Mahar 52

KEEPING AN EYE ON CORPORATE AMERICA
Two women at the forefront of the shareholder-rights movement are waging war on underperforming CEOs—and winning. Plus: A Quick and Dirty Guide to Proxy Statements
By Tom Dunkel 56

DRIVING FORCE
After years of neglect and condescension, American automakers are scrambling to capture the women's market—and catch up to the Japanese. *By Lucy Danziger*
Plus: The Best Deals on Wheels *By Peter Bahr* 60

WHY WOMEN ARE LEAVING THE LAW
It was seen as the ultimate career: instant professionalism combined with a chance to do good and make good. But more and more women are laying down the law. Here's why.
By Laura Mansnerus 64

FEAR OF FILOFAX
It's the secret phobia that stalks professional women everywhere.
By Alis Purcell 68

TRAVEL

FASHION: TRAVELING LIGHT
How to turn two suits into an on-the-road wardrobe 73

WEEKENDS: THE BEST HOTELS FOR WOMEN
WORKING WOMAN asked more than 100 frequent travelers to name the hotels that truly cater to businesswomen. Here, their 15 favorites. *By Anita Gates* 77

IMAGE: THE BUSINESS OF BEAUTY
Have Sample, Will Travel; Beauty Salon Meets Grand Hotel; and more 82

DEPARTMENTS

LETTER FROM THE EDITOR 10

BUSINESS BUZZ
The Power Un-Network; New Standouts in Congress; A Sure Sign of Success: The Last Laugh; and more 13

HOW I DID IT
Pampering Customers on a Budget: Colleen Barrett, executive vice president for customers at Southwest Airlines, on giving sky-high service at peanuts prices 19

MANAGING
When—and How—to Assert Your Authority
By Andrew S. Grove 24

YOUR MONEY
Finding the Best Credit Card for the Money
By Jayne Pearl 28

CAREER STRATEGIES
Are You Stressed to the Limit? Learning how to cope when you're under pressure at work and at home.
By Dr Adele Scheele 34

ENTREPRENEURIAL EDGE
Holding On to the Reins: Keeping growth steady when your business takes off like wildfire.
By Maggie Jones 38

HOTLINE
No Ceilings, No Doors; Byte-Size Résumés; Sex and the Working Woman; and more 44

OUT-BOX
Executive Uselessness
By Gail Collins 84

WORKING WOMAN APRIL

CONTENTS

FEATURES

THE WORKING WOMAN 50
The stories and statistics behind America's top 50 women business owners
By Janet Bamford 49

WOMAN ON THE VERGE
Her business has grown from an innovative couture collection into an image empire. Will Donna Karan be the next Ralph Lauren?
By Teri Agins 66

MOTHERS IN DANGER
Once they've given birth, soldiers, police officers and other women on the line face tough choices about their careers, their families—and the chance they won't come home at night.
By Marjorie Miller 70

UNDRESSING FOR SUCCESS
A French woman reveals her secret to chic: She has nothing to wear.
By Véronique Vienne 74

BEAUTY: THE NEW SOFT SELL
It's a cosmetics-counter reformation: Catering to the customer, not the quota.
By Anne Heller 78

HEALTH & FITNESS

OUTSMARTING STRESS
The latest on conditioning yourself to relax when you need to.
By Dava Sobel 83

STRESS CLINICS
When to go, where they are, what they cost and how much they can help.
By Lois Anzelauntz 86

THE FOOD-STRESS LINK
Nutritionist Joan Horbiak on how bad eating habits can affect your job performance.
By Francine Hermelin 92

WORKING WOMAN MAY

DEPARTMENTS

LETTER FROM THE EDITOR 10

BUSINESS BUZZ
The Billary Effect: A '90s Dilemma; Nurse Executives: On a Fast Track; A Test for the Desk-Stressed; and more 13

MANAGING
Where Employee Training Works Best: How companies are building better workers.
By Nancy K. Austin 23

HOW I DID IT
New Business From Old Clients: Alice Lusk of EDS on convincing a key customer to outsource more work 26

YOUR MONEY
Investing on a Shoestring: These seven mutual funds let you build a portfolio almost painlessly.
By Mary Rowland 31

CAREER STRATEGIES
Confronting Your Boss: Standing up to a superior is like walking through a minefield.
By Dr Adele Scheele 36

TECH TALK
Invasions of Privacy: Protecting yourself from electronic snoops.
By Jeffrey Ubois 42

HOTLINE
Words to Live By; Getting Hired—Not; New '90s Perks; and more 47

OUT-BOX
Starting this month, Pulitzer Prize–winning cartoonist Signe Wilkinson creates Reality Check for WORKING WOMAN 106



APRIL 1993 Vol. 58, No. 2

Contents

FEATURES

Container Standards — 74
By MICHAEL T. BOHLMAN, *Director, Quality Process & Improvement, Sea-Land Service, Inc.*

Cruise Industry — 36
By ROBERT C. CORNELISON, *President, Texas Ports Assn. & Port Director, Port Isabel*

Cruise Industry — 30
By FRANCIS X. NOLAN, *Partner, Nourse & Bowles*

Freeport, Grand Bahamas — 34
Special to WWS/World Wide Shipping

Great Lakes/St. Lawrence Seaway — 38
By JOHN J. JURSA, *Secretary & Treasurer, Canadian Port & Harbor Association*

ICHCA-USA — 68
By FRANCIS W. NOLAN, JR., *President, ICHCA-USA*

Intermodalism — 45
Special to WWS/World Wide Shipping

Pacific Rim — 60
By CHRISTOPHER J. RANKIN, *CEO, North American Trade Div., P&O Containers, Ltd.*

Project Cargoes — 56
By DOUGLAS CHEANEY, *President, DGC, Inc*

U.S. Customs — 16
By DAVID SERKO, *Senior Partner, Serko & Simon, NY, Contributing Editor, WWS/World Wide Shipping*

WWS/STAFF REPORTS

Advertisers Index — 69

Bulk — 66
By GEORGE ADCOCK, *WWS, Correspondent, Special Features*

Commentary — 2
By MARK FELICE, *WWS, Features*

Equipment — 76
By MARTIN C. PILSCH, JR., *WWS, Equipment*

Intermodalism — 42
By GEORGE ADCOCK, *WWS, Correspondent, Special Features*

Pacific Rim — 63
By SUZANNE CAUTHEN, *WWS, West Coast*

Project Cargo — 51
By CARLO J. SALZANO, *WWS, Washington, DC*

Protectionism — 21
By MARC FELICE, *WWS, Features*

Shipping — 26
By FRANK MARTINGALE, *WWS, Shipping*

Transportation Logistics — 28
By MARC FELICE, *WWS, Features*

U.S. Exports — 19
By MARC FELICE, *WWS, Features*

Washington Report — 8
By CARLO J. SALZANO, *WWS, Washington, DC*

WWS WORLD WIDE SHIPPING

TUNNELS AND TUNNELING

CONTENTS

March 1993 Vol 25 No 3

Comment: 150 years on 5

World News 9, 10, 11, 13, 15, 16

PERGAU, MALAYSIA 21
Dam and blast in a tropical jungle
Peter Darling, The Editor

CONVEYORS 31
Pros and cons of continuous haulage
Robert Rowe, MEng(Hons), ARSM

Vertically stacked twin tunnels 39
A Crespo, M del Papa and N Mina, ANAS, Rome, and G Corona, Studio SIC, Turin

BRITISH TUNNELLING SOCIETY 43
Design and construction of Conwy's immersed tube tunnel
Peter Stone, Director, Construction Management, Travers Morgan, and John McFadzean, MBE, Operations Director (Major Projects Division, Europe), Tarmac Construction

Letters to the Editor 49, 63, 64

ITA PREVIEW 51
Options for Tunnelling 1993
John Hellings, Assistant Editor

BRUNEL'S THAMES TUNNEL 56
The great bore
Dr Myles P O'Reilly

Development and use of microtunnellers in Europe 69
Jim Washbourne, BSc Eng (Hons), MSc, CEng, MICE, Principal Lecturer in Civil Engineering, Oxford Polytechnic

Developments in explosives 75
Per-Anders Persson, Center for Explosives Technology Research, New Mexico Tech, US

TUNNEL REHABILITATION 83
A varied and difficult challenge
Maurice Jones IEng, AMI, MinE, MISTC, Technical Journalist

State Transporation Library
Borrower's Request Form

· To request materials from this aquisitions list for a four-week loan period, fill in the necessary information and return this form to the **Transportation Library, 2nd Floor, 10 Park Plaza, Boston, MA 02116.**

· Complete the form by listing the call number(s) and title(s) for the item(s) you want.

· Check the method of delivery you would prefer
Interoffice mail_____ Pick-up at Library_____ Fax_____

NAME _____

AGENCY _____

ADDRESS _____

TELEPHONE _____

CALL # _____ TITLE _____

[redacted]
Gov. Docs. Collection
Univ. Library
University of Mass.
Amherst, MA 01003

MASS. STL1.3:993/2 v

SELECTED ACQUISTIONS

MARCH - APRIL 1993

GOVERNMENT DOCUMENTS COLLECTION
JUL 07 1993
University of Massachusetts Depository Copy

STATE TRANSPORTATION LIBRARY

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000

Toby Pearlstein
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Lynn Matis
Law Librarian

Irene Guthrie
Secretary

LIBRARY BULLETIN BOARD

NEW ACQUISITIONS .... BOOK REVIEW

Planning and Its Subfields

Stuck in Traffic: Coping with Peak-Hour Traffic Congestion

Anthony Downs. Brookings Institution, Washington, DC, and the Lincoln Institute of Land Policy, Cambridge, MA, 1992. 210 pp. $28.95, $10.95 (paperback).

I highly recommended this book to planners and others interested in current metropolitan traffic predicaments. Local decision makers and administrators who may be tempted to embrace single solutions to traffic congestion must read this book. Before they take the single-solution plunge, they should examine Downs's comprehensive overview of remedies.

Traffic congestion is not just individually aggravating; its social costs run to billions of dollars of wasted time and fuel, not counting the direct and indirect costs of the pollution it generates. Although congestion is not yet universal, too many metropolitan regions are already choking on it, while others are racing toward it. Downs rounds up the usual list of suspects: rapid urban growth, a general desire for low-density residential living, tremendous growth in the use of the automobile, and especially, the prevalence of the single driver. It is this last culprit that becomes the focus of Downs's battle cry. It spurs him to examine primarily demand-oriented solutions, although he also considers supply-oriented ones.

In one chapter Downs explores eight supply-oriented remedies, including increased road construction, improved transportation system efficiency, and increased use of HOV lanes. The proponents of transit will find no friend in Downs, who argues that in spite of being more politically palatable than most demand-oriented approaches, it has not been cost effective. His near dismissal of transit is an echo of transit proponent George Smerk's conclusion about the mode's very limited potential in resolving urban mobility (*The Federal Role in Urban Mass Transportation* (University of Indiana Press, 1991). While Downs does not dismiss these supply-oriented approaches outright, he suggests that they have been the traditional solutions of choice, in spite of their dubious successes, their great costs, and their generally localized impact.

He then examines fifteen demand-oriented solutions, which he favors because they are less costly and generally have a broader potential impact than their supply-side cousins. Of course, he recognizes that the basic goal of demand-oriented approaches is to discourage travel, which makes them generally unpopular because they affect almost everyone. In six chapters he examines peak-hour road pricing; behavioral changes, such as shifting peak-hour travel, encouraging ride-sharing, raising parking costs, and encouraging transit usage; increasing residential densities; changing the jobs-housing balance; concentrating jobs into large clusters; and local growth management. He offers a streamlined appraisal of all these remedies and ranks them in descending order of potential impact. He selects peak-hour road pricing and surcharges on long-term parking as potentially the most comprehensive remedies. While he recognizes that peak-hour road pricing has numerous political liabilities, he asserts that "the only way to discover whether the potential benefits of road pricing outweigh its drawbacks is to have some daring metropolitan area try it." Incidentally, Smerk also advocated road pricing and parking surcharges. Conversely, concentrating jobs in large clusters, improving jobs-housing balance, increasing auto licensing fees, and limiting local growth are not solutions worth considering under most circumstances.

Downs is adamant that no single solution can be expected to have much of an impact on traffic congestion however extensively applied. Fluctuations in traffic are too susceptible to his three essential principles of traffic: (1) the *triple convergence principle*, by which traffic reduction on a roadway is offset by attracting drivers who had previously used alternative routes, as well as those who had traveled at other times or had used public transit; (2) the *swamping effect principle* in which rapid urban growth and accompanying traffic overwhelm modest decreases in congestion; and (3) the *imperviousness principle*, which makes it impossible for metropolitan jurisdictions to resolve their traffic congestion problems, because traffic is also everyone else's concern.

Downs's arguments are logical, well documented, and very compelling, a quality that comes no doubt from his clear and purposeful writing style that conveys an obvious mastery of the subject and an ability to cut through its complexities and point easily to its core issues. If the general tone of this review sounds uncritical, it reflects my enthusiasm at seeing the fruits of such a holistic effort and my willingness to lay aside personal prejudices that might tempt me to pick at details. Academics who are looking for lengthy reviews of the literature will be disappointed; this book was obviously written for harried policymakers. Downs counsels them simply: Don't wait until the problem is too great, by then it may be too late; don't expect to find one optimal panacea; instead, practice the principle of *one hundred small cuts:* literally hacking away at the problem by applying many remedies simultaneously but in a coordinated manner.

He warns the rest of us that traffic congestion does not stand much of a chance of being seriously ameliorated in the short run. Thus, he encourages us, possibly tongue in cheek, to learn to make the best of it and "learn to enjoy congestion. Get a comfortable, air-conditioned car with a stereo radio, a tape player, a telephone, perhaps a fax machine, and commute with someone who is really attractive. Then regard the moments spent stuck in traffic simply so (*sic*) an addition to leisure time."

JOHN C. LOWE

Lowe is a professor of geography at George Washington University. His recent interests are in the spatial dimensions and patterns of metropolitan commuting.

SELECTED ARTICLES FROM LEGAL PERIODICALS

ADR: A Solution for Environment Disputes by Stephen Crable, *Arbitration Journal,* March 1993, p.24-36.

A Massachusetts Guide to Preserving and Piercing the Corporate Veil, *Massachusetts Law Review,* March 1993, p.3-19.

Best Value Source Selection-Contracting for Value, or Unfettered Agency Discretion, *Public Contract Law Journal,* Winter 1993, p.275-338.

Defending Natural Resource Damage Claims: Minimizing the Liability of Responsible Parties by John Gerald Gleason, Paul S. Doczkur and Michael V. Ducaet, *University of Detroit Mercy Law Journal,* Winter 1993, p.281-311.

Legal Software Directory, *ABA Journal,* April 1993, p.SD1-SD14.

Massachusetts Tort Claims Act-Municipal Corporations-Liability for Tort-Government Immunity-Public Duty Rule, *Massachusetts Law Review,* March 1993, 21-24.

New Trends in the Arbitration of Employment Disputes by Evan J. Spelfogel, *Arbitration Journal,* March 1993, p.6-15.

Sexual Harassment under Workers' Compensation Law by Darryll M. Halcomb Lewis, *Labor Law Journal,* May 1993, 297-306.

The Massachusetts Public Records Law: Common Issues for the Municipal Practitioner by Carol A. Thompson, *Boston Bar Journal,* May/June 1992, p.15-18

TO ORDER A COPY OF AN ARTICLE(S), YOU MAY COMPLETE THE REQUEST FORM AT THE END OF THIS BOOKLET BY LISTING THE TITLE OF THE ARTICLE(S) AND THE NAME OF THE JOURNAL(S)

ADMINISTRATIVE AGENCIES--UNITED STATES.

HJ
9802
.A17
T72
1992

United States. General Accounting Office.
Transition series / United States General Accounting Office. -- Washington, D.C. : The Office, [1992].
28 v. ; 23 cm.

1. Administrative agencies--United States. 2. United States--Executive departments. 3. United States--Politics and government--1981-

28 APR 93 27399299 TLBAsc

ADVERTISING LAYOUT AND TYPOGRAPHY.

HF
5825
.R47
1991

Retail advertising designs / Clip Away.
-- New York, NY : Design Press, 1991.
208 p. : ill. ; 28 cm. -- (Clip-art resource book)
ISBN 0-8306-3840-7

1. Advertising copy. 2. Advertising layout and typography.

06 APR 93 22708273 TLBAsc 90-21480

AEROBIC EXERCISES.

A-V
RA
781.15
.S83
1992

Sweatin' to the oldies 4
[videorecording] : an aerobic concert with Richard Simmons. -- [S.l.] : Deal-A-Meal Corporation, c1992.
1 videocassette : sd., col. ; 1/2 in.

1. Low impact aerobic exercises. 2. Aerobic exercises. 3. Exercise. 4. Physical fitness.

01 MAR 93 25605284 TLBAsc

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886.5
.T72
1992

Transportation control measure information documents / by Cambridge Systematics, Inc. ... [et al.] ; prepared for U.S. Environmental Protection Agency, Office of Mobile Sources. -- Cambridge, Mass. : Cambridge Systematics, Inc., 1992.
444 p. in various pagings : ill. ; 28 cm.

1. Air quality management--United States. 2. Air--Pollution--United States. 3. High occupancy vehicle lanes--United States. 4. Employer-sponsored transportation--United States. 5. Ridesharing--United States.

15 MAR 93 27179192 TLBAsc

ASPHALT.

HE
131
.T687r
no.1342

Asphalt and asphalt additives. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
v, 100 p. : ill., maps ; 28 cm. -- (Transportation research record ; no. 1342)
ISBN 0-309-05205-X

1. Asphalt. 2. Asphalt--Additives.

26257183 TLBAsc 92-23796

AUTOMATIC DATA COLLECTION SYSTEMS--CONGRESSES.

TL
154
.W4
N37
1992

National Traffic Data Acquisition Conference (1992 : Sacramento, Calif.)
National Traffic Data Acquisition Conference : proceedings, October 25-29, 1992, Sacramento, California. -- [Sacramento, Calif. : California Dept. of Transportation, 1992]
iii, 675 p. : ill. ; 28 cm.
STRN: FEWA/CA/TO/TDS-92-1

1. Automatic data collection systems --Congresses. 2. Traffic surveys--Electronic equipment--Congresses. 3. Traffic flow--Measurement--Electronic equipment--Congresses. 4. Motor vehicle scales.

05 APR 93 27722435 TLBAsc

BRIDGES, CONCRETE--TESTING.

TG
335
.R67
E96
1992

Roschke, Paul N.
Experimental and analytical study of a two-span post-tensioned bridge slab / by Paul N. Roschke and Kevin R. Pruski ; sponsored by Texas Department of Transportation in cooperation with the United States Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xiii, 131 p. : ill. ; 28 cm. -- (Research report ; 1182-2)
STRN: FEWA/TX-92/1182-2

27268055 TLBAsc SEE NEXT CRD

BUILDING FAILURES.

TE
441
.L48
W59
1992

Levy, Matthys.
Why buildings fall down : how structures fail / Matthys Levy and Mario Salvadori ; illustrations by Kevin Wooat. -- New York : W.W. Norton, 1992.
334 p. : ill. ; 24 cm.
ISBN 0-393-03356-2

1. Building failures. 2. Structural failures.

01 MAR 93 24468105 TLBAsc 91-34954

C (COMPUTER PROGRAM LANGUAGE)

QA
76.73
.C15
S352
1992

Schildt, Herbert
The craft of C : take-charge programming / [by] Herbert Schildt. -- Berkeley, Calif. : Osborne McGraw-Hill, c1992.
xv, 457 p. : ill. ; 24 cm. + 3.5 inch computer disk.
ISBN 0-07-881882-6

1. C (Computer program language)

16 MAR 93 27653595 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.H37
S96
1992

Hartgen, David T.
Super-regional very long range transportation modeling with a GIS / by David T. Hartgen, Tuenjun Li, George Alexiou. -- Charlotte, N.C. : University of North Caroline at Charlotte, Center for Interdisciplinary Transportation Studies, [1992]
16 leaves : ill. ; 28 cm. -- (Transportation publication report ; no. 82)
1. Transportation--North Carolina--Charlotte Metropolitan Area--Planning. 2. Urban transportation--North Caroline--Charlotte Metropolitan Area--Planning. 3. Regional planning--North Caroline--Che rlotte Metropolitan Area. 4. Geo graphic information systems.

01 MAR 93 27475557 TLBAsc

CULVERTS--RESEARCH.

TA
447
.S37
L66
1993

Sargand, S. M. (Shad M.)
Long term study of metal box culverts / principal investigators: Shad M. Sargand, Glenn A. Hazen ; project researcher: Teruhisa Masada ; graduate research assistant: Chelliah Devarajan. -- [Athens?] : Ohio University, Civil Engineering Dept. ; Springfield, VA : Available through the National Technical Information Service, 1993.
v, 105 p. : ill. ; 28 cm.
STRN: FHWA/OH-93/002

1. Culverts--Research. 2. Culverts--Testing.

05 APR 93 27775230 TLBAsc

HANDICAPPED--EMPLOYMENT--UNITED STATES.

HD
7256
.U5
J66
1993

Jones, Timothy L.
The Americans with Disabilities Act : a review of best practices / Timothy L. Jones. -- New York : AMA Membership Publications Division, American Management Association, 1993.
122 p. : ill., port. ; 22 cm. -- (AMA management briefing)
ISBN 0-8144-2350-7
1. Handicapped--Employment--United States. 2. Handicapped--Employment--Law and legislation--United States. 3. Handicapped--Legal status, laws, etc.--United States. 4. Discrimination in employment--Law and legislation--United States. 5. United States. Americans with Disabili ties Act of 1990.

05 APR 93 27187785 TLBAsc 92-38227

ENVIRONMENTAL PROTECTION.

GF
41
.G67
1992

Gore, Albert, 1948-
Earth in the balance : ecology and the human spirit / Al Gore. -- Boston : Houghton Mifflin, c1992.
407 p. : ill. ; 24 cm.
ISBN 0-395-57821-3 (alk. paper)

1. Human ecology. 2. Environmental protection. 3. Environmental policy.

16 MAR 93 24912611 TLBAec 91-42676

HIGHWAY COMMUNICATIONS.

TE
228.3
.M32
E92

MacCarley, Carl A.
Evaluation of closed-circuit television technology for application in highway operations / authors: Carl A. MacCarley, Sue Dotson. -- San Luis Obispo, CA : California Polytechnic University, Transportation Research Group, [1992]
647 p. in various pagings : ill. ; 28 cm.
STRN: FHWA/CA/CP-TRG-TR-92-2

1. Highway communications. 2. Closed-circuit television. 3. Traffic flow. 4. Express highways--Management.

22 MAR 93 27248197 TLBAsc

FATIGUE--PREVENTION.

BF
482
.M33
Y68
1992

McGee-Cooper, Ann.
You don't have to go home from work exhausted! : a program to bring joy, energy and balance to your life / by Ann McGee-Cooper ; with Duane Trammell & Barbara Lau. -- Bantam ed. -- New York : Bantam, 1992.
xvii, 270 p. : ill. ; 23 cm.
ISBN 0-553-37061-8

1. Fatigue--Prevention. 2. Mental fatigue--Prevention. 3. Burn out (Psychology)--Prevention. 4. Success--Psychological aspects. 5. Success in business. 6. Vitality.

05 APR 93 26684575 TLBAsc

HIGHWAY COMMUNICATIONS.

TE
228.3
.B78
193
1991

Bruce, Edward L.
IVHS : how much can it really accomplish? / by Edward L. Bruce and David T. Hartgen. -- Charlotte, N.C. : Departments of Geography and Earth Sciences and Civil Engineering, University of North Caroline at Charlotte, [1991]
21 leaves : ill., charts ; 28 cm. -- (Transportation publication report ; no. 53)

1. Highway communications. 2. Automobiles--Electronic equipment.

01 MAR 93 26200074 TLBAsc

HIGHWAY COMMUNICATIONS--NORTH CAROLINA--CHARLOTTE METROPOLITAN AREA.

TE
228.3
.C37
1992

CARAT, Congestion Avoidance and Reduction for Autos and Trucks : consumer transportation information component. -- [Charlotte, N.C. : University of North Caroline at Charlotte, Center for Interdisciplinary Transportation Studies, 1992]
1 v. (various pagings) : ill. ; 28 cm. -- (Transportation publication report ; no. 75)
1. Traffic congestion--North Carolina--Charlotte Metropolitan Area. 2. Traffic flow--North Carolina--Charlotte Metropoliten Area. 3. Highway commu nications--North Carolina--Che rlotte Metropoliten Area.

01 MAR 93 27389356 TLHAsc

HIGHWAY COMMUNICATIONS--NORTH CAROLINA--CHARLOTTE METROPOLITAN AREA.

TH
228.3
.H37
M34
1992

Hartgen, David T.
Making IVHS really work : a status report on the CARAT Project / by David T. Hartgen, Edward L. Bruce. -- Charlotte, N.C. : University of North Caroline at Charlotte, Dept. of Geography and Earth Sciences, [1992]
24 p. : ill. ; 28 cm. -- (Transportation publication report ; no. 70)
1. Traffic congestion--North Carolina--Charlotte Metropoliten Area. 2. Traffic flow--North Carolina--Charlotte Metropolitan Area. 3. Highway communications--North Carolina --Charlotte M etropoliten Area.

16 MAR 93 27391581 TLHAsc

HIGHWAY COMMUNICATIONS--NORTH CAROLINA--CHARLOTTE--PUBLIC OPINION.

TE
228.3
.G38
D45
1991

Gourdin, Kent N.
The demand for Intelligent Vehicle Highway Systems (IVHS) in Charlotte, NC : a marketing study / by Kent N. Gourdin and Patricia E. McIntyre. -- Charlotte, N.C. : Department of Marketing, Belk College of Business Administration, University of North Carolina at Charlotte, [1991]
21 p. : chart, map ; 28 cm. -- (Transportation publication report ; no. 64)
1. Highway communications--North Carolina--Charlotte--Public opinion. 2. Commuters--North Carolina--Charlotte--At titudes.

01 MAR 93 26200088 TLHAsc

HIGHWAY DEPARTMENTS--UNITED STATES.

HE
308
.S87
1992

Survey and summaries of metropolitan planning organizations and state departments of transportation : a survey examining the relationships between state departments of transportation, metropoliten planning organizations, and transit agencies and how they are effected by the passing of the Intermodal Surface Transportation Efficiency Act of 1991 / Standing Committee on Planning, Metropolitan Planning Organization Task Force. -- [Lansing] : Michigan Dept. of Transportation, [1992]
1 v. (various pagings) ; 28 cm.

Rev-1 3-16-93 TLHAsc SEE NEXT CRD

HIGHWAY DEPARTMENTS--UNITED STATES--MANAGEMENT.

TH
23
.H37
C65
1991

Hartgen, David T.
Comperative performance of state highway systems, 1984-1989 / by David T. Hartgen, J. Scott Lane, Michael A. McAdams. -- Charlotte, N.C. : University of North Carolina at Charlotte, Department of Geography and Earth Sciences, [1991]
63 p. : ill. ; 28 cm. -- (Transportation publication report ; no. 63)

1. Highway planning--United States--Evaluation. 2. Highway departments--United States--Management.

01 MAR 93 27427208 TLHAsc

HIGHWAY DEPARTMENTS--UNITED STATES--STATES.

TE
23
.H37
S55
1989

Hartgen, David T.
Similarities among state highway systems / by David T. Hartgen. -- Charlotte, N.C. : University of North Carolina at Charlotte, [Transportation Academy, 1989]
14, [14] p. : ill. ; 28 cm. -- (Transportation publication report ; no. 3)

1. Roads--United States--States--Finance. 2. Highway planning--United States--States. 3. Highway departments--United States--States.

01 MAR 93 21142620 TLHAsc

HIGHWAY DEPARTMENTS--UNITED STATES--STATES--EVALUATION.

TE
23
.H37
R47
1992

Hartgen, David T.
Resources versus [sic] results : comparative performance of state highway systems 1984-1990 / by David T. Hartgen and Russell T. Krauss. -- Charlotte, N.C. : University of North Carolina at Charlotte, Department of Geography and Earth Sciences, 1992.
2 v. : ill. ; 28 cm.

1. Highway departments--United States--States--Evaluation. 2. Highway departments--United States--States--Rating of. 3. Roads--United States--States--Finance. 4. Highway planning--United States--States.

01 MAR 93 26877624 TLHAsc

HIGHWAY DEPARTMENTS--UNITED STATES--STATES--INFORMATION SERVICES.

TE
23
.L36
F32
1989

Lane, Jeffrey S.
Factors affecting the adoption of information systems in State DOTS / by Jeffrey S. Lane and David T. Hartgen. -- Charlotte, N.C. : University of North Carolina at Charlotte, Transportation Academy, [1989]
23, [20] p. : ill. ; 28 cm. -- (Transportation publication report ; no. 18)

1. Highway departments--United States--States--Information services. 2. Highway departments--United States--States--Management.

Rev-1 3-1-93 TLHAsc

BIGHWAY ENGINEERING--ARIZONA.

TE
24
.A6
A74
1987

Arizona counties highway manual / prepared by JHK & Associates ; prepared for Arizona Department of Transportation, Transportation Research Center. -- [Tucson, Ariz.] : JHK & Associates, [1987]
1 v. (various pagings) : ill., charts, maps ; 28 cm.
STRN: AZ 87/228-1

1. Roads--Arizona. 2. Highway engineering--Arizona. 3. Traffic engineering--Arizona. 4. Highway planning--Arizona.

22 MAR 93 16118251 TLBAsc

HIGHWAY PLANNING--DATA PROCESSING.

TE
175
.B37
C66
1992

Barnes, Kirk E.
Considerations in the application of freeway computer simulation models to project evaluation / Kirk E. Barnes. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vi, 35 p. ; 28 cm. -- (Research report ; 1232-11)
STRN: TX-92/1232-11
1. Highway planning--Data processing. 2. Roads--Design and construction--Data processing. 3. Traffic estimation--Simulation methods.

27841702 TLBAsc

LOCAL TRANSIT--ILLINOIS--CHICAGO--ACCESS FOR THE PHYSICALLY HANDICAPPED.

HV
3023
.I3
C42
1992

The Chicago Transit Authority comprehensive service plan for people with disabilities. -- [Chicago, IL. : Chicago Transit Authority, 1992.]
[3] 89, [4] leaves : maps ; 28 cm.

1. Physically Handicapped--Illinois--Chicago--Transportation. 2. Chicago Transit Authority--Planning. 3. Local transit--Illinois--Chicago--Access for the physically handicapped.

16 MAR 93 25354320 TLBAsc

LOCAL TRANSIT--UNITED STATES--ACCESS FOR THE PHYSICALLY HANDICAPPED.

HV
3023
.A3
G85
1992

Guidelines for improvements to transit accessibility for people with disabilities : technical report / prepared by Nancy Coburn ... [et al.]. -- Washington, D.C : Federal Transit Administration : Distributed in cooperation with the Technology Sharing Program, U.S. Dept. of Transportation, [1992]
i v. (various pagings) ; 28 cm.

01 MAR 93 27308681 TLBAsc SEE NEXT CRD

LOW CHOLESTEROL DIET--RECIPES.

A-V
RM
237.75
.F57
F571
1990

Lynn Fischer's low cholesterol gourmet [videorecording] / produced by AVP Productions. -- Video ed. -- The Discovery Channel, 1991.
1 videocassette (90 min.) : sd., col. ; 1/2 in. -- (The Discovery Channel Video Collection.)

1. Low cholesterol diet--Recipes.

01 MAR 93 27317308 TLBAsc

MARINE TERMINALS--ECONOMIC ASPECTS--NORTH CAROLINA--WILMINGTON.

HE
554
.W8
1991

Hartgen, David T.
The effect of changes in hinterland infrastructure on port competitiveness : impact of Interstate 40 on the Port of Wilmington / [by David T. Hartgen, Michael A. McAdams, Wayne Walcott]. -- Charlotte, N.C. : University of North Carolina at Charlotte, Department of Geography and Earth Sciences, [1991]
19, [8] p. : ill. ; 28 cm. -- (Transportation publication report ; no. 59)
1. Express highways--Economic aspects--North Carolina--Wilmington. 2. Marine terminals--Economic aspects--North Carolina--Wilmington. 3. Harbors--North Carolina--Wilmington--Access.

16 MAR 93 27427180 TLBAsc

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--ACCESS FOR THE PHYSICALLY HANDICAPPED.

HE
4491
.B719
S862
1992

Massachusetts Bay Transportation Authority. Office for Transportation Access.
MBTA key station plan : Commuter rail / [Massachusetts Bay Transportation Authority]. -- [Boston, Mass.] : The Authority, 1992.
44, [33] leaves (large print) : maps, plans ; 28 cm.

1. Physically handicapped--Massachusetts--Boston Metropolitan Area--Transportation. 2. Local transit--Massachusetts--Boston Metropolitan Area. 3. Massachusetts Bay Transportation Authority--Access for the physically handicapped. 4. Massachusetts Bay

06 APR 93 27715355 TLBAsc SEE NEXT CRD

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--ACCESS FOR THE PHYSICALLY HANDICAPPED.

HE
4491
.B719
S863
1992

Massachusetts Bay Transportation Authority. Office for Transportation Access.
MBTA key station plan : heavy rail/light rail / [Massachusetts Bay Transportation Authority]. -- [Boston, Mass.] : The Authority, 1992.
71, [28] leaves (large print) : maps, plans ; 28 cm.

1. Physically handicapped--Massachusetts--Boston Metropolitan Area--Transportation. 2. Local transit--Massachusetts--Boston Metropolitan Area. 3. Massachusetts Bay Transportation

06 APR 93 27715383 TLBAsc SEE NEXT CRD

MICROSOFT WINDOWS (COMPUTER FILE)

QA
76.76
.W56
W44
1992

Welskamp, Keith.
Windows 3.1 : self-teaching guide / Keith Welskamp, Saul Aguiar. -- New York : Wiley, c1992.
xx, 412 p. : ill. ; 24 cm. -- (Self-teaching guide)
ISBN 0-471-55870-2 (paper)

1. Microsoft Windows (Computer file)

05 APR 93 24539501 TLBAsc 91-33055r832

MICROSOFT WINDOWS (COMPUTER FILE)

QA
76.76
.W56
M87
1992

Murray, William H., 1943-
Windows 3.1 programming / William H. Murray III, Chris H. Pappas. -- New York : Osborne McGraw-Hill, c1992.
xvii, 805 p. : ill. ; 24 cm. + 1 computer disk ; 3 1/2 in.
ISBN 0-07-881855-9

1. Microsoft Windows (Computer file)
2. Windows (Computer programs)

16 MAR 93 27320456 TLBAsc

PARATRANSIT SERVICES--UNITED STATES.

HE
5620
.R53
F47
1992

Ferguson, Erik.
Transportation management associations in the United States / prepared by Erik Ferguson, Catherine Rose and Michael Meyer (Georgia Institute of Technology). -- Washington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1992]
xv, 158 p. : ill. ; 28 cm.
1. Paratransit services--United States. 2. Local transit--United States--Contracting out. 3. Privatization--United States. 4. Ridesharing-- United States. 5. Employer-spon sored transportation.

05 APR 93 27174977 TLBAsc

PAVEMENTS, ASPHALT--DESIGN AND CONSTRUCTION.

TE
270
.K46
M59
1992

Kennedy, Thomas William, 1938-
Mix design procedures and considerations for polymer modified asphalt compatability and stability / by Thomas W. Kennedy, Hassan Torshizi, David R. Jones, IV ; conducted for Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information S ervice, 1992]
ix, 486 p. : ill. ; 28 cm. -- (Research rep ort ; no. 492-1F)

22 MAR 93 27654987 TLBAsc SEE NEXT CRD

PHYSICALLY HANDICAPPED--ILLINOIS--CHICAGO--TRANSPORTATION.

HV
3023
.I3
C42
1992

The Chicago Transit Authority comprehensive service plan for people with disabilities. -- [Chicago, IL. : Chicago Transit Authority, 1992.]
[3] 89, [4] leaves : maps ; 28 cm.

1. Physically Handicapped--Illinois--Chicago--Transportation. 2. Chicago Transit Authority--Planning. 3. Local transit--Illinois--Chicago--Access for the physically handicapped.

16 MAR 93 25354320 TLBAsc

RAILROAD ENGINEERING.

HE
131
.T687r
no.1341

Railroad issues. -- Washington, D.C. : Transportation Research Board, National Research Council, 1992.
v, 82 p. : ill., maps ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1341)
ISBN 0-309-05207-6

1. Railroad engineering.

26211221 TLBAsc 92-25493

REGIONAL PLANNING--NORTH CAROLINA--CHARLOTTE METROPOLITAN AREA.

HE
308
.C33
S72
1991

Starting a regional transportation planning organization / by Neal D. Floyd ... [et al.]. -- [Charlotte, N.C.] : University of North Carolina at Charlotte, Dept of Geography & Earth Sciences, [1991]
27 p. : maps ; 28 cm. -- (Transportation publication report ; no. 57)
1. Regional planning--North Carolina --Charlotte Metropolitan Area. 2. Urban transportation--North Carolina--Charlotte Metropolitan Area--Planning. 3. Transportation--North Carolina--Charlotte Metropolitan Area--Planning. 4. Urban transportation--Planning.

01 MAR 93 27451590 TLBAsc

ROADS--UNITED STATES--DESIGN AND CONSTRUCTION.

TE
175
.S32
1992

Safety effectiveness of highway design features / U.S. Department of Transportation, Federal Highway Administration. -- [McLean, Va.] : Federal Highway Administration, [Design Concepts Research Division, 1992]
6 v. : ill. ; 28 cm.
STRN: FHWA-RD-91-044
1. Roads--United States--Design and construction. 2. Pedestrian facilities design--United States. 3. Bicycle trails--United States--Safety measures. 4. Roads--United States--Interchanges and intersections. 5. Traffic safety--United States.

05 APR 93 27350431 TLBAsc

ROCKSLIDES.

HE
131
.T687r
no.1343

Rockfall prediction and control and landslide case histories. — Washington, D.C. Transportation Research Board, National Research Council, 1992.
v, 129 p. : ill. : 28 cm. -- (Transportation research record ; no. 1343)
ISBN 0-309-05206-8

1. Rockslides. 2. Landslides.

26130583 TLBAsc 92-24222

TRAFFIC ACCIDENTS--TEXAS.

HE
5614.3
.T4
A32
1992

Adamo, Anthony Francis.
Analysis of single vehicle run-off-the-road accidents on rural four-lane or more divided highways in Texas / prepared by Anthony F. Adamo and Warren K. Wray. — Lubbock, Tex. : Texas Tech University, [1992]
xi, 285 p. : ill. ; 28 cm. -- (Research report / Texas Tech University, Dept. of Civil Engineering ; no. 11-18-91/1-1257)

1. Traffic accidents--Texas. 2. Rural roads--Texas. 3. Roads--Texas--Design and construction.

05 APR 93 27856628 TLBAsc

TRAFFIC ASSIGNMENT--MATHEMATICAL MODELS.

HE
336
.T68
Y82
1992

Yuan-Wang, Chen.
Development, testing and evaluation of a nodal restraint assignment procedure / by Chen Yuan-Wang, Jim D. Benson and George B. Dresser ; sponsored by Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
181 p. in various pagings : ill. ; 28 cm. -- (Research report ; no. 1153-4)
STRN: FHWA/ TX-90/1153-4

27473023 TLBAsc SEE NEXT CRD

TRAFFIC SIGNS AND SIGNALS--DESIGN AND CONSTRUCTION.

Oversize
TE
228
.S53
1992

Sign fabrication, installation, and maintenance : innovative practices / [Hugh W. McGee ... et al.]. -- Washington, D.C. : Federal Highway Administration, Office of Technology Applications, [1992]
vi, 63 p. : ill. ; 29 cm.
STRN: FHWA/SA-91/033

1. Traffic signs and signals--Design and construction. 2. Traffic signs and signals--Maintenance and repair.

05 APR 93 26623138 TLBAsc

TRAFFIC SIGNS AND SIGNALS--EVALUATION.

TE
228
.R87
R48
1992

Russell, Eugene R.
A review of Kansas Department of Transportation reflective sheeting policy / prepared by Eugene R. Russell and Malgorzata Rys. — [Topeka, Kan. : Kansas Dept. of Transportation ; Springfield, VA : Available through the National Technical Information Service, 1992]
xxiii, 161 p. : ill. ; 28 cm.

1. Traffic signs and signals--Evaluation. 2. Reflectors (Safety devices)--Evaluation.

01 MAR 93 26954678 TLBAsc

TRANSPORTATION AND STATE--UNITED STATES.

HE
206.3
.M68
1989

Moving America : new directions, new opportunities. -- [Washington, D.C.] : U.S. Dept. of Transportation, [1989-
v. <1 >: ill. ; 28 cm.

1. Transportation and state--United States. 2. Transportation--United States.

01 MAR 93 20230811 TLBAsc 90-601039

URBAN TRANSPORTATION--PLANNING.

HE
131
.T687r
no.1349

Public transit : management, operations, and planning and development. — Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
vii, 141 p. : ill., maps ; 28 cm. -- (Transportation research record ; no. 1349)
ISBN 0-309-05212-2

26401869 TLBAsc SEE NEXT CRD

WASTE PRODUCTS AS ROAD MATERIALS--UNITED STATES.

HE
131
.T687r
no.1345

Geoenvironmental and engineering properties in rock, soil, and aggregate. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
, 117 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1345)
ISBN 0-309-05208-4

1. Waste products as road materials--United States.

26263362 TLBAsc 92-25598

AMERICAN CITY & COUNTY®

May 1993 Vol. 108, No. 6

COLUMNS
4 **Editor's View** . Pencils, Crayons, Bullets
10 **Information Technology**...Better Than Being There
12 **Financial Management**...Taking a Chance on Investments
14 **Inside Washington**.. Locals Fear Costs of ADA Implementation

TELECOM-MUNICATIONS
24 **The Fiber-Optic Revolution**
Fiber optics is touted as a way to revolutionize communications for businesses and households alike. But there are numerous policy issues that local governments must consider before approving a fiber-optic franchise. ☐ **26** Interpreter Service Makes the Message a Little Clearer ☐ **28** Cable Act Requires Municipalities To Take Charge ☐ **32** Fiber Optics Brings Cerritos Back to the Future

COVER STORY
34 **Soap No Evil**
Local governments face the unique challenge of serving as providers and protectors of clean water. Thus, groundwater contamination is an ever-increasing concern as cities and counties wrestle with their rights and responsibilities. ☐ **36** New Kensington Replaces Open Reservoir ☐ **42** Public Opposition Overcome in Tank Siting ☐ **46** Has Regulation Run Amok?

TECHNOLOGY IN GOVERNMENT
49 **Out with the Old, In with Re-Engineering**
To provide citizens with increased services at lower cost, local governments are reorganizing their operations with the advent of new technologies. ☐ **50** GIS Makes Property Appraisal Less Taxing ☐ **52** The Case of the Computerized Courtroom

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

FEATURES

OHIO EVALUATES REINFORCED CONCRETE DECK OVERLAYS 16
SEISMIC RETROFIT CUTS INSTALLATION COSTS 20
GEORGIA REBUILDS THE TALLULAH BRIDGE 23
HOW INDIANA IMPROVES WORK-ZONE SAFETY 24
OFF-ROAD SURVEY SYSTEM USED IN CALIFORNIA 26
PRACTICAL PRACTICES FROM ASPHALT RESEARCH 29
SHRP'S ASPHALT PROGRAM TODAY 30
PULL-THROUGH PIPE REHABS CULVERTS ECONOMICALLY 31
ASPHALT RUBBER: WHERE IT STANDS 32
NEWARK'S RECYCLED RUBBER-IN-ASPHALT WINS AWARD 32
LIFE-CYCLE COSTS VS. LIFE-CYCLE PERFORMANCE 33

VOL. 63, NO. 5
MAY 1993

BETTER ROADS

CIVIL ENGINEERING
MAY 1993 VOLUME 63 NUMBER 5

SPECIAL ISSUE: WATER RESOURCES

FEATURES

After the Blast A report from New York's World Trade Center, where a terrorist attack has raised questions about the nation's other "vertical cities." *By Paul Tarricone* 44

Rocky Mountain Hydro By May 1995, the $700 million Rocky Mountain Pumped Storage Project will bring 850 MW of peaking power to northwest Georgia. *By Teresa Austin* 48

Fit to Drink Small drinking-water systems are having big problems complying with new regulations emerging from the 1986 amendments to the Safe Drinking Water Act. *By John Prendergast* 52

Invasion of the Zebra Mussels It's not a 1950s B movie but a freshwater user's nightmare come to life in the form of prolific, intake-clogging mollusks. *By Richard San Giacomo and Nicholas G. Randell* 56

New Wells Safeguard Scenic Tahoe Engineers are finding new wells and enhancing the capacity of old ones, due to surface-water scarcity and new EPA surface-water regulations. *By William C.B. Gates* 60

Landmark American Bridges A book published this month by ASCE pays tribute to the science—and art—of building bridges. 64

High-Tech Landfill Caps Closing the town dump once was a simple matter of piling enough dirt over it to keep the crows and vermin out. Not anymore. *By Joseph C. Barbagallo and Salvatore J. Triano* 66

The Denver Airport: Managing a Megaproject Steering the $2.7 billion, 53 sq mi Denver Airport job to completion has required a management structure that is both streamlined and distributed. *By Ginger S. Evans, Richard L. Haury and Guy M. Stricklin* 70

Managing the Data Explosion An experimental data-management system allows engineers at the U.S. Geological Survey to synthesize reams of water-quality data quickly. *By Richard P. Hooper and Brent T. Aulenbach* 74

Water Pipelines: Tackling Toxics In Girwood, Alaska, coal-tar enamel–coated steel pipes, used elsewhere in the U.S., leached toxic chemicals into the drinking water. *By Steven Eng* 77

BusRide

Vol. 29, No. 4 ISSN 0192 8902 May 1993

FEATURE ARTICLES

32 Riverside Transit Agency: Sixteen years of leadership and growth
35 Deadline nears for Bus Maintenance and Tourism Scholarship applications
39 1993 Bus Photo Competition deadline is coming soon
42 A few comments from women in the bus industry
48 Unique management philosophy, women in key positions equal Metrotrans quality
52 Ex-journalism hopeful finds both challenge and opportunity with Phoenix, Arizona's RPTA
54 *George M. Smerk:* A time of opportunity and challenge
55 Quality time: AGTA meets in New Orleans
56 Graphics Competition deadline is June 18
57 Six forums set for second half of 1993
59 MotorVisions Competition honors best in coach design
60 APTA Transit Management Conference in Portland focuses on the transit professionals of the future
62 Evergreen Forum covers wide variety of maintenance subjects
64 Bus products, computers, traditional maintenance procedures highlight agenda at Colonial Forum

GIS WORLD

VOL. 6 NO. 4 *The World's Leading Geographic Information Systems Publication* APRIL 1993

FEATURES

34 **State Transportation Department Empowered by GIS** *By Patti Smith*

38 **GIS Applications Benefit from Census Transportation Planning Data** *By Howard J. Simkowitz*

41 **GIS Targets Agricultural Nonpoint Pollution** *By Tawna Mertz*

47 **City Operations Optimized with GIS** *By Peter G. Bennett*

50 **Global Information Moving to Full-Service Database** *By Ole Hebin and Ron Witt*

56 **UNITAR Promotes GIS Training Programs Worldwide** *By Stephen Gold*

GIS NewsLink

9 Gore Scheduled to Address U.S. Geo-Data Policy Forum

9 GIS for Pipelines Planned

9 EIS Users' Conference Set for May

9 U.S. Air Force Uses GPS in Somalia

9 Protest Filed for U.S. Forest Service Project 615

10 FGDC Publishes Manual of Federal Data Products

10 TerraLogics Develops Software for FEMA, Banks

10 WorldView Licensed to Launch Satellites

10 Intergraph President Resigns, Meadlock Assumes Duties

10 USGS Supports Map Data Partnerships

11 ERDAS Opens U.K. Office

11 CSR Completes Water/Wastewater Utility AM/FM Study

11 Zeh Graphic Systems Opens Far East Office

11 Synercom Signs Agreement with Steel Partners

11 USAID Funds Technology Transfer Abroad

12 Chester's Five Divisions Unify

12 Similar Name, But That's All

12 GIS World, Inc., Geodan Sponsor European Business Conference

12 MapInfo Announces Honors

12 PCI Selected for INEGI Contract

12 U.S. Air Force Awards Hughes $15 Million Contract

12 Columbian Government Selects Leica

13 Portland Releases Map Catalog

GIS WORLD

VOL. 6 NO. 5 *The World's Leading Geographic Information Systems Publication* MAY 1993

FEATURES

38 **GIS and 3-D Modeling Fight Subsurface Contamination at Federal Site** *By Mark R. Leipnik*

42 **GIS Catches Criminals** *By Tim Miller*

44 **User Involvement Benefits Data Modeling Projects** *By Raphael Sussman and Geoff Bannon*

50 **Objectives Analysis Chops Cost of Property Revaluation Photo Imaging System** *By Eugene C. Barlaz*

52 **Variety of Products, Services Offered at Business Conference** *By Peter Van Demark*

54 **National Policy Forum Addresses Future Needs**

56 **Join the GIS-L Electronic Community!** *By David M. Mark and Ezra Zubrow*

58 **Mexico Supports Diverse GIS Efforts** *By Rafael Moreno-Sánchez*

61 **TIGER 1992 Version Scheduled to Arrive** *By Donald F. Cooke*

GIS NewsLink

9 Cook College Releases GRASS Data Sets

9 ITRE Receives Funding for GIS Laboratory

9 Distributed Automation Research Project Completed

9 GeoSystems and Donnelley Cartographic Merge

9 EOSAT Supports Educational Project

9 GIS Introduced to Portuguese Planners

10 Thematic Conference on Geologic Remote Sensing Held

10 A/E/C SYSTEMS Show Approaches

10 Qatar Hosts First GIS Conference

11 NASA Budget Boosts Technology

11 ERDAS Holds First Western Regional Users' Meeting

11 Genasys Donates Software to BCIT

11 Eastman Kodak Implements AM/FM System

11 FIG Scheduled Down Under

12 New Faces Appear on *GIS WORLD* Editorial Board

12 Geotronics Wins Army Contra

12 Los Angeles County Chooses I

12 Emery Awarded Columbian AM/FM/GIS Project

12 Map Production Facilities Ope in Egypt

12 Second Annual BOGI Contest Announced

13 PlanGraphics Names Rector C

13 GRASS Users Hold Conference

13 ESRI Launches ArcView 2

13 EPA's GIS Budget Cut

13 Intergraph Announces Partnership Plan

13 Policy Forum Keynote Speaker Changed

Hispanic BUSINESS

May 1993

COVER STORY
NEW YORK'S NEW POWER PLAYERS 34
The time for a unified agenda has arrived.

CONTRACTS
THE PRESIDENT'S DIVERSITY SECRET 10
Breakdown of $30 million among inaugural vendors unknown.

TRADE
THE UN: SOURCE OF CONTRACTS 14
Information needed on $12 billion in projects.

ENTERTAINMENT
STARS ON THE HORIZON 18
These Big Apple artists are courting national fame.

MARKETING
CONNECTING WITH THE FUTURE 50
California firm plans to go national.

POLICY
THE PUERTO RICAN FACTOR 24
As a state, the island would forever change the U.S.

ACHIEVERS
THE BIG APPLE NETWORK 46
New Yorkers who have made a name for themselves.

Journal of

Urban Planning and Development

Volume 119 Number 1 March 1993

TECHNICAL PAPERS

SITE CODE: Computer-Based Regulatory Information for Site Development.
Douglas T. Shaw, David R. Maidment, and George N. Arimes 1

Multiobjective Land-Use Planning Model.
Vedia F. Dokmeci, Gulen Çagdaş, and Selma Tokcan 15

Modeling School Utilization and Consolidation.
Richard L. Church and Alan T. Murray 23

Infrastructure-Management-System Analysis.
W. J. Thornton and H. D. Ulrich 39

DISCUSSION

Statistical Models to Predict Commercial- and Parking-Space Occupancy. Erin McGuiness and Sue McNeil.
By J. M. Keneipp. Closure by authors 48

GOVERNING

MAY 1993 / VOLUME 6 NUMBER 8

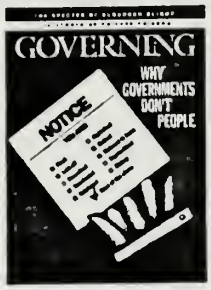
TRENDS

25
Trailer Park Tyranny
By Charles Mahtesian
Few localities want them, but it is no longer possible to keep mobile home parks out of sight politically. People who live in manufactured housing are demanding an end to a wide range of abuses.



25

28
Byting Into Poverty
By Tod Newcombe
As demand for welfare and other human services programs grows and resources shrink, governments are investing heavily in technology to bridge the gap.



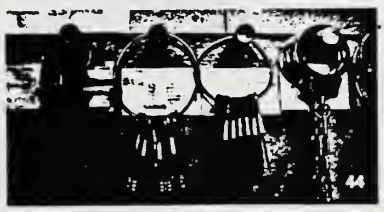
ON THE COVER.
A fanciful government pink slip is the subject of Ted Pitts' illustration.

FEATURES

30
The Fantasy of Downsizing
By Jonathan Walters
Most governments will do anything to avoid layoffs, even in the worst economic times. Firing people is an unpleasant and politically difficult thing to do. It is also something that most governments do not do well.

36
The Specter Of Suburban Blight
By Rob Gurwitt
Many of America's old, inner suburbs are in a scrap for survival. They must compete with nearby communities for residents, businesses and tax revenues, all the while trying to hold back the urban ills once confined to the central city.

44
The Punishment Industry
By Penelope Lemov
As governments seek ways to control corrections costs, dozens of prisons are being run by private companies. But does good fiscal policy equal good social policy?



44

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on finding a vaccine for inequality.

10
Dialogue
Letters from readers, and an essay by Denis Wood.

15
Connections

16
Network



16

60
Finance

62
Environment

64
Technology

68
Clinton and the Country
The president's first Supreme Court nominee holds the potential to change the way state and local governments do business.

Vol. 34 No. 4 April 1993 ISSN 0041-0683

Traffic Engineering + Control

176 Prepaid Vouchers as a parking control mechanism
M W Pickett

186 ROBOSIGN: computer-aided design for roundabouts
L Irani, B Kay, A Sang and S Kalesmark

195 MOVA and LHOVRA: traffic signal control for isolated intersections
P Kronborg and F Davidsson

205 Transport Operations Research Group, University of Newcastle upon Tyne Progress Report 1992/1993
M G H Bell

181 Parking
211 News
217 Letters to the Editor
219 Industrial News
222 Buyers' Guide
231 Classified Advertisements
232 Coming Events

CONTENTS

JANE'S Airport REVIEW

Incorporating Aviation Ground Equipment Market

ISSN 0954 76 49 APRIL 1993

News
2 Europe prepares for summer traffic peaks: the US imposes tighter controls to halt further delays in the AAS programme being developed by IBM. Guangdong plans a fourth airport, the Standard Chartered Bank stresses the need for a new Hong Kong airport, and Hong Kong's freight forwarders hold talks with Shenzhen airport officials
3 The slot wars continue at Chicago/O'Hare.
4 FAA report.

Business
7 A round-up of contracts and business developments

Airports
9 After 20 years of federal government constraints, Vancouver's newly formed airport authority is now free to catch up on lost time.

ATC
15 The development of raster scan technology and improved screen resolution has greatly improved the air traffic controller's lot.
17 In an exclusive interview Dr Assad Kotaite, President of the ICAO Council, addresses issues relating to MLS and GNSS implementation
19 The FAA delays commitment to Category II/III MLS production, and Europe calls for a civil alternative to GPS/GLONASS.

Equipment
21 As environmentally friendly liquid de-icers become firmly established in the market, competition to develop a solid version is increasing
24 The FAA finalises rules on aircraft de-icing; NASA finds a possible replacement for glycols in aircraft de-icing
25 Imminent ICAO regulations are likely to increase the cost of docking guidance systems for airports
27 A Buyer's Guide to Fuel Services
30 A round-up of new products
32 Diary



Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 5
May 1993

Contents

Articles

6 **Harold F. Hammond Fellowship Initiated**

11 **Guidelines for the Design and Application of Speed Humps**
By ITE Technical Council Task Force on Speed Humps
This is the summary of a proposed recommended practice to provide guidelines for the design and use of speed humps.

18 **An Ambitious Six-Year Development Plan for the Future of Taiwan**
By L. David Shen
To alleviate traffic congestion, pollution and the strain on inadequate transportation facilities, the Taiwan government has started a development plan to upgrade the island's highways, railways, seaports and airports, and to build one of the most sophisticated mass transit and high-speed rail systems in the world.

23 **Weaving Operations in Bostoa**
By Vassilios Alexiadis, Paul D. Muzzey and Owen J. MacDonald
The authors' research attempts to formulate a "custom-fit" methodology for analyzing weaving operations under local traffic conditions.

30 **A Methodology for Comparing Accident Rates**
By Paul E. Basha and Steve L. Ramsey
A method for analyzing accident rates recently has been implemented in Scottsdale, Arizona, using the "Box and Whisker" diagram based upon the median rather than the mean, making conformance with a normal data distribution unnecessary.

36 **Should Yield Stop?**
By Kenneth Todd
In examining the stop vs. yield issue, the author asks how is the interest of the public best served.

43 **Neighborhood Traffic Control: Bellevue's Approach**
By Karen L. Gonzalez
Bellevue, Washington, has implemented a program to control and manage traffic in neighborhoods through community and agency cooperation.

News

7 **ITE News**
President's Letter • Honorary Member

8 **Washington Report**
ISTEA Conference • Environmental Groups File Suit • Federal Highway Appointments

Industrial Engineering®
The Magazine for Systems Integrators

Volume 25, No. 5 May 1993

FEATURES

SIMULATION: HOW TO SET GOALS AND HOW TO GET STARTED 26
Simulation modeling allows the IE to answer "What if?" questions.
By Cindy Schiess

SIMULATION BRINGS PRODUCTIVITY ENHANCEMENTS TO THE SOCIAL SECURITY ADMINISTRATION 28
Today's simulation modeling technology has been steedily gaining attention for use in service system applications like those with the federal government.
By Julian Swedish

A FORUM ON CRUCIAL ISSUES IN SIMULATION MODELING 32
Q&A with five experienced simulation users
By Averill M. Law

20 QUESTIONS FOR YOUR SIMULATION CONSULTANT 39
A series of questions that any knowledgeable consultant should be able to answer before proceeding with joint projects.
By Van B. Norman

CONFERENCE-IN-PRINT 41
Highlights of the 44th International Industrial Engineering Conference

AN ABC GUIDE TO BUSINESS PROCESS REENGINEERING 52
BPR builds on existing change processing mechanisms and goes a stage further.
By Jon Parker

MANAGING CHANGE WITH CONFIGURATION-VALUE MANAGEMENT 54
Integrating systems, infrastructure and motivation to manage change
By Craig A. Stevens and Steven W. Gambrell

WAREHOUSING: THE STRATEGIC WEAPON FOR CUSTOMER SERVICE 61
Many people do not understand warehousing's role in customer service.
By Frank E. Daly

NORTHERN TELECOM ACHIEVES IMPROVED QUALITY BY COMBINING DOE AND SPC 63
Using response surface methodology combined with useful Taguchi concepts
By Paul A. Brinkley

Journal of
Transportation Engineering

Volume 119 Number 3 May/June 1993

Technical Papers

Decision Analysis of Alternative Highway Alignments.
Ram B. Kulkarni, Robert L. Burns, John Wright, Brian Apper, Thomas O. Baily, and Stephen T. Noack 317

Section 15 Patronage Reporting for Barrier-Free Transit Service.
Ashok Kumar and Stephen T. Parry 333

Duration and Frequency of Seasonal Traffic Counts.
Satish C. Sharma and Reddy R. Allipuram 344

Evaluating the Capacity of Freeway Weaving Sections.
Mu-Han Wang, Michael J. Cassidy, Patrick Chan, and Adolf D. May 360

Microcomputer Model for Design and Location of Runway Exits.
Antoine G. Hobeika, Antonio A. Trani, Hanif D. Sherali, and Byung J. Kim 385

Primitive-Based Classification of Pavement Cracking Images.
H. N. Koutsopoulos and A. B. Downey 402

Priority Rating of Highway Maintenance Needs by Neural Networks.
T. F. Fwa and W. T. Chan 419

Waste Products as Highway Materials in Flexible Pavement System.
Seung W. Lee and K. L. Fishman 433

Knowledge-Based System for Flexible Pavement Structural Evaluation.
Y. J. Chou 450

Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer.
Boming Tang 467

Technical Note

Yearly Variation of Directional Distribution of Highway Traffic.
Satish C. Sharma 478

Discussion

Procedures for Estimating Accident Reductions on Two-Lane Highways. Rahim F. Benekohal and Asma M. Hashmi.
By Joseph E. Hummer. Closure by authors 486

Errata 488

Journal of
Structural Engineering
Volume 119 Number 5 May 1993

TECHNICAL PAPERS

Evaluation of Site-Dependent Inelastic Seismic Design Spectra.
Eduardo Miranda 1319

Analytical Crack Model for Reinforced-Concrete Structures.
H. C. Chan, Y. K. Cheung, and Y. P. Huang 1339

Effective Width of Locally Buckled Plates in Compression and Bending.
Tsutomu Usami 1358

Effect of Slab on Inelastic Response of R/C Building.
Üsame Yalçin and Ahmad J. Durrani 1374

Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls.
A. K. H. Kwan 1388

Concrete Toughness after 20 Years.
Alberto Castellani 1402

RC Frame Connections Rehabilitated by Jacketing.
Sergio M. Alcocer 1413

Damage to Cable-Stayed Bridge during 1988 Saguenay Earthquake. I: Pseudostatic Analysis.
A. Filiatrault, R. Tinawi, and B. Massicotte 1432

Damage to Cable-Stayed Bridge during 1988 Saguenay Earthquake. II: Dynamic Analysis.
A. Filiatrault, R. Tinawi, and B. Massicotte 1450

TECHNICAL NOTE

Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints.
J. F. Davalos, D. A. Kish, and M. P. Wolcott 1670

Stress Distribution in Front Columns of High-Rise Buildings.
Vladimir Křístek and Karel Bauer 1464

Simplified Creep Analysis of Composite Beams with Flexible Connectors.
Luigino Dezi, Carlo Ianni, and Angelo Marcello Tarantino ... 1484

Dynamic Along-Wind Response of Buildings: Comparative Study.
Wojtek Jesien, Theodore Stathopoulos, and H. Kinh Ha 1498

Analysis of Arch Dams.
Alexander Michael Ansah 1516

Structural Failures and Engineering Ethics.
W. M. Kim Roddis 1539

Lateral Load Sharing by Diaphragms in Wood-Framed Buildings.
Timothy L. Phillips, Rafik Y. Itani, and David I. McLean 1556

Analysis of Laminated Glass Units.
C. V. Girija Vallabhan, Y. C. Das, Mohareb Magdi, Mehmet Asik, and James R. Bailey 1572

Monte Carlo Simulation—Tool for Better Understanding of LRFD.
P. Marek, M. Guštar, and P. J. Tikalsky 1586

Reliability-Based Service-Life Assessment of Aging Concrete Structures.
Yasuhiro Mori and Bruce R. Ellingwood 1600

Plastic Tripping of Ring Stiffeners.
Joan Huang and Tomasz Wierzbicki 1622

Seismic Durability of Retrofitted Reinforced-Concrete Columns.
Harvey L. Coffman, M. Lee Marsh, and Colin B. Brown 1643

Strength and Efficiency of Eccentrically Loaded Layered Timber Columns.
D. B. Van Dyer and Y. Abdul-Massih 1662

PARKING
THE MAGAZINE OF THE PARKING INDUSTRY

F

23 **INDUSTRY FORUM — The Clinton Economic Package**
Rich Parker
Will this program be a boom or a bust for the nation s economy generally and the parking industry specifically?

26 **NPA '93 — Last Call for New Orleans Convention**
Registration, hotel, travel and exhibit information plus a preview of the business session on how to be a winner at lobbying

29 **Valet Parking: Then and Now**
Herb Citrin
Providing a needed service from Restaurant Row to the Academy Awards.

May 1993
Vol. 32, No. 5

33 **Capitalizing on the Inauguration** *Martin Janis*
Every four years, Washington becomes a giant parking lot

37 **Architects Take a Second Look at Parking Garages**
Neal I. Payton, AIA
New standards are being set for this increasingly important building type

44 **That Boring Boilerplate Can Cost You $$$$ (Part II)**
Robert N. Sacks, Esq.
Why it's important to know what's in the last five pages of a lease

48 **Joint Venturing: An Option for Overseas Growth**
Claudette M. Christian, Esq.
Joint ventures are a hot product of the '90s

53 **A.J. Layden: The Best of Texas** *Lou Cook*
A Texan rides to the top of the parking industry

ROADS®
& BRIDGES
Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

Vol. 31/No. 5 MAY 1993

FEATURES

28 **Open-graded drain layer underlies thick PCC**
Illinois grassroots interstate creates nearly indestructible pavement
30 **Bridge inspection safety begins with plan**
Safety training should include proper equipment, rigging, applicable OSHA regulations, and accident procedures (regional editions only)
32 **New '93 asphalt pavers roll off production line**
Manufacturers introduce new, upgraded paver models; many featured at recent ConExpo in Las Vegas
36 **After five years, lime base stabilization holds up**
Baseline Road near Sacramento undergoes full-depth base recycling with lime fly ash stabilizer mixed in (regional editions only)
38 **Partnering plays big role in top NAPA HMA job**
Teamwork between contractor, agency means smooth sailing in Hayes award winning project; Kenyon, Gray, Lang named to NAPA Hot Mix Hall of Fame
48 **Illinois quality program in contractors' hands**
Illinois contractors shoulder more responsibility for pavements as state turns to new quality management program
56 **How acceptable is RAP in today's industry?**
Reclaimed asphalt pavement (RAP) offers economical alternative to virgin materials; ownership of material, stockpile maintenance key to use

New England Economic Indicators

APRIL 1993

4 *Data Summary*
6 *Employment*
10 *Unemployment*
11 *Charts: Employment, Unemployment, Confidence*
12 *Labor Market Areas*
14 *Unemployment / Help Wanted / Charts*
15 *Hours and Earnings / Consumer Confidence*
16 *Income / Retail Sales*
17 *Charts: Prices, Housing, Retail, Income*
18 *Prices / New Business*
19 *Electricity Sales*
20 *Construction*
21 *Housing*
22 *State Taxes*
23 *Selected Assets*

mlr

Monthly Labor Review

April 1993
Volume 116, Number 4

Deborah P. Klein, *Editor-in-Chief*
Robert W. Fisher, *Executive Editor*

Articles

3 **Employment effects of the rise and fall in defense spending**
Proposed defense spending cutbacks lead to a reduced supply of jobs in both the government and private sectors
Norman C. Saunders

11 **Education and the work histories of young adults**
Many of the sex–race differences in youth labor market experience become smaller or disappear with increases in educational attainment
Jonathan R. Veum and Andrea B. Weiss

21 **Occupational employment in commercial banking, 1987–90**
Commercial banks maintained traditional occupational staffing patterns, despite the many changes in the industry's economic and legislative climate
Jeffrey C. Kuster

26 **Industry productivity in natural and processed cheese**
The productivity increase over the 1972–90 period is attributable in part, to demand, technology, computers, and marketing techniques
Daniel J. Curtin

Reports

33 Recuperation time for work injuries, 1987–91
Martin E. Personick and Ethel C. Jackson

pc trans

Spring1993 Issue

contents

features
19 Capturing Screen Images
27 Getting the Overall Traffic Picture with Site Impact Computer Models

bootstraps
12 How to Read Those Computer Ads

leading edge
14 The Coolest Thing in Windows Programming

tech file
16 Balancing Technical Capability with Necessity

reviews
29 KARS
30 HY8 Culvert Analysis
31 SIGNAL85

PTI JOURNAL

PUBLIC TRANSPORTATION INNOVATION

TABLE OF CONTENTS

Features

PUBLIC TRANSPORTATION INNOVATION (PTI) AWARDS

3 Most Innovative Public Transit Project
5 Transportation Demand Management
5 Metropolitan Planning Organization Project
19 Contract Management
27 New Technology
31 State Sponsored Project

DIRECTORY OF INNOVATIVE SERVICES

9 Operators and Managers
13 Vehicles
16 Lifts & Restraints
20 Components & Ancillary Equipment
24 Computer Software & Electronic Data Collection
26 Consultants Insurance

METRO Magazine

a bobit publication serving surface mass transportation for 88 years

MAY / JUNE 1993

Vol. 88 No. 3



More than just fares are being collected at transit turnstiles and high-tech devices that accept payment for rides.

Features

COVER STORY
Hidden Savings, Smarter Bidding Sell Rail to Public, Politicians 20
With billions being spent on new passenger rail this decade and the next, there are many opportunities to save money. Remanufactured railcars can cost half as much as new ones.

Seize the Day, MK's Smith Says of Rail 26
Changes in Congress, the White House and the thinking of American voters have created a golden opportunity that must not be squandered.

High-Tech Fare Collection Cuts Costs, Increases Ridership 32
An endless stream of valuable information can now be gathered along with each passenger. Transit agencies use the data to project new routes and improve service.

The Bus of the Future Will Be Lighter, Stronger, Smarter 42
The voices calling for the next generation transit bus are growing to a chorus. Here is a glimpse of what this new vehicle might be.

Motorcoach Deregulation Is at Crossroads 50
Ten years of megamerger, bankruptcies and intense competition have prompted the Senate to re-examine the wisdom of the 1982 Bus Act.

Private Motorcoach Operators Have ABA's Susan Perry in Their Corner 52
She lobbies Washington power brokers with years of experience including work for the Senate, House and APTA.

Continued Growth Is Forecasted For Bus-Manufacturing Industry 54
U.S. buyers projected to get 88,000 buses in seven years. Report says public transportation will become 'less hostile to commuters.'

Expansion + Diversification + Knowing Market = Motorcoach Success 56
Indiana's John Shoup is the second recipient of METRO Magazine's Industry Achievement Award. He has taken a leadership role in the motorcoach industry.

APA

PLANNING CONTENTS

American Planning Association Vol. 59. No. 5 May 1993

10 **Visions of Things to Come.** From across the country: five examples of the newest wrinkle in comprehensive planning.

16 **Sustainability Comes to Main Street.** Timothy Beatley and David Brower outline principles to live—and plan—by.

20 **Streetwise.** Lawrence Houstoun, Jr., describes how cities are coping with street vendors—in Planning Practice.

23 **On the Road to Branson, Missouri.** Country music has brought big money—and congestion—to a little town in the Ozarks. By Barbara Becker and Susan Bradbury.



5 **From the Capitals**
7 **APA News**
President's farewell, CPC grants.
27 **Tech**
Park equipment.
28 **News**
Seattle Commons, D.C. plan.
30 **Letters**
Cul-de-sacs, ISTEA update.
32 **Planners Library**
Rehabilitating suburbia.
34 **From the Board**
Welcoming change.
34 **Members in the News**
35 **Conference Calendar**
35 **Consultant Directory**
42 **Viewpoint**
Painting a bigger picture.

Railway Age

May 1993

31 On the record with Phil Anschutz
"We have focused this company back on the customer," says SP's chairman and CEO.

39 Financing high speed rail: It can be done
The timing for investment is right. The challenge is to marry the public and private sectors.

47 Amtrak's incremental approach to high speed rail
A close look at how Amtrak plans to implement high speed rail on existing rights-of-way.

54 The AMD-103: New power and a new look for Amtrak
GE's new passenger locomotive has the potential to set a new reliability standard.

55 NJ Transit: On a growth curve
New light rail systems and better commuter rail linkages define a $514 million capital plan.

59 Tri-Rail weathers the storm—and grows
Hurricane Andrew was a blessing in disguise for South Florida's commuter rail system.

61 Rebuilding America's railroads through R&D&T
R&D&T is gaining daily momentum in the railway and railway supply industries.

67 M/w: High productivity, short windows
Fast-on/fast-off equipment is one key to increasing efficiency.

71 TTX's Ray Burton: "We have a story to tell"
U.S. railroads handle freight better than anywhere else, says the Railroader of the Year.

17 Rail Update
TTX's Excellent Suppliers; Schneider tests RoadRailer; Santa Fe/J. B. Hunt premium service; CBRY rebuilds.

24B Transit Update
MK Highliners; Smerk joins "Transit Connections"; DART deals with the environment; NYMTA tests braille.



The American Management Association Magazine

MAY 1993

Management Review



COVER STORY:
10 STRATEGY

Strategic Alliances: Partnering for Success **Competition and cooperation make strange bedfellows. Many companies are learning that creating alliances and partnerships with competitors is a great way to penetrate new markets.**

FEATURES

16 RESTRUCTURING
Intelligent Resizing: View from the Top Down Cost cutting can spell disaster for a firm that hasn't carefully evaluated its core competencies. Before you reorganize, take a good look at what your company does—and what it can afford not to do in the future.

25 STRATEGY
The Anatomy of an Acquisition In this generation of downsizing, an often overlooked way to gain market share is to purchase a company that complements your own. Here's a step-by-step guide to making a wise acquisition choice.

37 SALES
On with the Show Trade shows, long associated with crazed conventioneers in coonskin caps, have reemerged as an important marketing vehicle. Without a game plan, however, your participation could be a big bust. Here's what you need to know before the show.

44 EDUCATION
Achieving the CEO's Agenda: Education for Executives Education for senior management is essential in order to develop executives capable of leading change. But without the support of the CEO, it's practically worthless.

61 HUMAN RESOURCES
Six Myths of Sexual Harassment Before you can ensure that your workplace is free of this dangerous pestilence, you must first recognize that your company is not immune from it. Here, we demythologize what sexual harassment is all about.





DEPARTMENTS

1 EDITOR'S NOTE
TQM tends to help us find ways to do things perfectly, when what we often need is to find the perfect thing to do.

4 MEMO FOR MEMBERS
Year-end message and financial statement of AMA.

6 FRONT LINES
How the White House filled 4,000 jobs....Customer service aided by fax....Television comes to the aid of job hunters.

8 LETTERS

22 FACE TO FACE
Lillian Vernon, first lady of the mail order catalog business, explains how she grew her company from its humble beginnings to what is now a huge success.

30 FORUM
When quality efforts fail, it is not because the concept of total quality management is flawed. The many TQM success stories indicate that failure is due to flawed implementation.

31 CUTTING EDGE
Somewhere along the line, total quality management became Total Quality Management—the magic elixir that would save companies from the fate suffered by so many of their competitors.

49 DC PERSPECTIVE
Now in its eighth round of negotiations, the General Agreement on Tariffs and Trade is still at a standstill. The stakes, however, are getting higher as countries try to protect their own interests in an increasingly global environment.

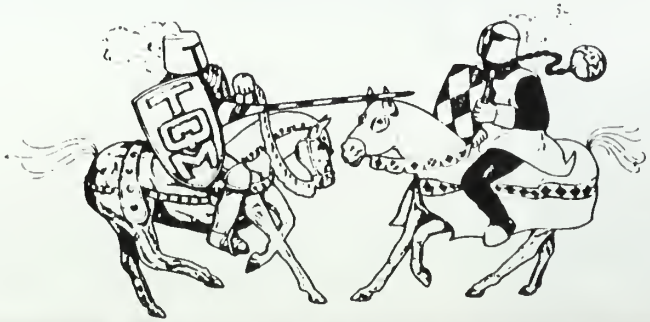
52 IN PRACTICE
With advertising dollars getting harder and harder to come by, here's how you can use public relations to build brand equity and gain market share.

56 MEMBER'S UPDATE
What's new and upcoming for AMA members.

57 MEMBER'S SPOTLIGHT
AMA member Dominick F. Carbone questions whether the quality movement is just the newest fad or if it really has substance.

59 LEGAL BRIEFS
What you need to know to prevent lawsuits from cropping up due to the new Financial Accounting Standards Board ruling on retiree healthcare benefits.

64 LIGHTER SIDE
These days, a job title is meaningless. So how do you answer the question, "So, what do you do?"



CONTENTS

MAY 1993
VOL. 30, NO. 5

TRAINING

THE HUMAN SIDE OF BUSINESS

FEATURES

UNIONS IN THE '90s: COOPERATION OR CAPITULATION? 25
By Bob Filipczak
For the last decade, many unions have followed a policy of cooperation with management. Now some members are beginning to wonder if their unions have gone too far.

WHY I DESPAIR FOR THE HR PROFESSION 37
By Alan Weiss
A search for a new human resources director becomes a terrifying journey into the heart of darkness.

A FRESH START FOR SALES TRAINING 45
By Beverly Geber
Just like everything else in this fast-paced, customer-focused world, selling has changed. Dramatically.

REINVENTING THE FACTORY WITH LIFELONG LEARNING 55
By Norman S. Nopper
Honeywell Canada wanted a more competitive factory, but it didn't buy robots or slash wages. It gave workers a lot of chances to learn.

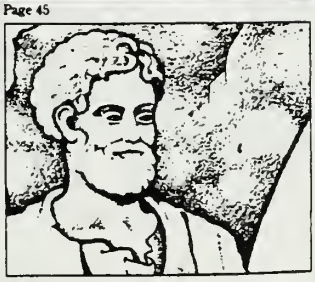
HOW TO TRAIN EXPERIENCED SUPERVISORS 61
By Martin M. Broadwell
It's one thing to give new supervisors the orientation they need to handle an unfamiliar role. It's another to teach something useful to veterans.



Page 37



Page 45



Page 69

PRESENTATION TIPS FROM OLD, DEAD GREEKS 69
By Frank O'Meara
Most of the truly useful advice you hear about public speaking was old news when Plato was a pup.

CBT OR NOT CBT? 73
By Nina Adams
Is computer-based training the right medium for the course you're designing? This decision aid can help you make the right choice.

DEPARTMENTS

EDITORS' NOTEBOOK 10
That Old Team Spirit

TRAINING TODAY 12
Resumé fraud, family leave, 20 questions about women and more.

CALENDAR 18

LETTERS 21

BOOKS & FILMS 85

FACTS & FIGURES 91
Corporate Values, British Style

NEW PRODUCTS & SERVICES 93

FREE INFORMATION 98

SEMINARS & WORKSHOPS 102

CLASSIFIEDS 105

VIEWPOINT 108
Wet Sheep
By Bob Hughes

Cover illustration by Carter Goodrich

PRINTED WITH SOY INK

TRANSPORTATION JOURNAL

CONTENTS

SPRING 1993 / VOL. 32 / No. 3

ARTICLES *Page*

Determinants of Shortline Railroad Performance
CURTIS M. GRIMM
HARRY J. SAPIENZA 5

Strategic Airline Policy in the Globalizing Airline Networks
TAE HOOM OUM
ALLISON J. TAYLOR
ANMING ZHANG 14

Competitive Issues in Intermodal Railroad-Truck Service
DONALD V. HARPER
PHILIP T. EVERS 31

Private Fleet Use: A Transaction Cost Model
ARNOLD MALTZ 46

BOOK REVIEWS

Donald J. Bowersox, Patricia J. Daugherty, Cornelia L. Droge, Richard N. Germain, and Dale S. Rodgers, *Logistical Excellence: It's Not Business as Usual*
KARL B. MANRODT 54

Laurence E. Gesell, *Airline Re-regulation*
ARTHUR J. MILLER, JR. 55

Harry T. Dimitriou, *Transport Planning in Third World Cities*
GARY N. DICER 56

WATER

Engineering & Management

Vol. 140, No. 5

Transportation Research

May 1993

Volume 27A, No. 3, May 1993 **Part A: Policy and Practice**

SPECIAL ISSUE

ENERGY AND GLOBAL CLIMATE CHANGE

Guest Editor: DAVID L. GREENE

Contents

David L. Greene 163 Transportation and energy: The global environmental challenge

Asif Faiz 167 Automotive emissions in developing countries—Relative implications for global warming, acidification and urban air quality

Mark A. DeLuchi 187 Greenhouse-gas emissions from the use of new fuels for transportation and electricity

W. T. Watterson 193 Linked simulation of land use and transportation systems: Developments and experience in the Puget Sound region

Steven E. Shladover 207 Potential contributions of intelligent vehicle/highway systems (IVHS) to reducing transportation's greenhouse gas production

FEATURES

QBS: Who, What, When and Why
Misunderstood by many water/wastewater facility owners, the Qualifications Based Selection of engineering firms has proved its worth 24

Lead and Copper Rules Complicate Matters for Water Systems
Here's a review of what water utility managers must contend with to meet the lead and copper rules 28

Public Water Suppliers Fight Bad Press With PR Campaign
Adverse publicity prompted an East Coast water authority to implement a continuing public relations program 32

WEM's 2nd Water Treatment Product Innovation Awards
Winners of *WEM*'s Second Annual Product Innovation Awards are recognized and described 36

Careful Emergency Planning Will Pay Dividends
Most water/wastewater operations have some level of emergency plan in place, but is it enough? This article gives an overview of the detail required 44

AWWMA Show Guide
Featured are members of the Water and Wastewater Equipment Manufacturers Association who will be exhibiting at the AWWA Annual Convention in San Antonio, Texas, in June 48

WORKING WOMAN

CONTENTS

FEATURES

WORKING WOMAN SURVEY: WHAT WOMEN THINK OF WOMEN BOSSES
Queen Bee. Bitch. Role Model. As more women move into management, are they fulfilling or contradicting the stereotypes? A survey on the state of relations between women in the office. *By Pamela Kruger* **40**

HARD DRIVE
Autodesk CEO Carol Bartz has refocused the software company's strategy, created a new management structure, expanded the core business and battled breast cancer. Now comes the hard part. *By Jonathan Littman* **44**

SPECIAL SECTION: LIFE AFTER NANNYGATE **49**
Big Business Takes On Child Care
More companies are creating new programs to help working parents. *By Diane Harris* **50**

Why It Pays to Pay On the Books
If Zoe Baird had read this, she might be attorney general today. *By Peter Richards* **52**

A Blueprint for Reform
How government, business and employees can ensure quality care. *By Diane Harris* **54**

THE BEST MUTUAL-FUND ADVICE YOU'LL EVER GET
Fidelity guru Peter Lynch reveals the single best strategy for top investment returns. **58**

BEAUTY: LIQUID SHADE
Sun protection is a big business. Here's how to read between the lines on the labels. *By Constance Cardozo* **62**

HEALTH & FITNESS

WHAT AGE IS YOUR BODY?
Experts tell how exercise helps stop time in its tracks and keeps you feeling—even thinking—young. *By Daryn Eller* **67**
Plus: The best workouts for your age, and targeting the trouble spots. *By Alison Schecter*
And: Working out with eight of the famously fit. *By Francine Hermelin*

DEPARTMENTS

LETTER FROM THE EDITOR **10**

LETTERS **12**

BUSINESS BUZZ
Clinton's Plan: Good for Women?; Getting the Truth in Exit Interviews; Can Dorothy Hamill Save the Ice Capades?; and more **15**

MANAGING
Criticism: Your best management tool is knowing when and how to do it

HOW I DID IT
Convincing Male Managers to Target Women: Kate Bednarski led Nike into the women's market **23**

CAREER STRATEGIES
Job-Hunting Advice for Executives
By Dr. Adele Scheele **26**

TECH TALK
The Fax-by-Phone Solution; By increasing productivity, a faxmodem will pay for itself quickly

ENTREPRENEURIAL EDGE
Till Debt Do Us Part: How entrepreneurial couples—a growing small-business category—keep their marriages and companies thriving
By Mary Granfield **33**

HOTLINE
20/20 Hindsight; Local-Area Networks; Job-Seeker Labels; and more **39**

OUT-BOX
The Worst Ways to Advertise



49 SPECIAL SECTION: THE DAY-CARE DILEMMA

CONTENTS

JOURNAL OF THE AMERICAN PLANNING ASSOCIATION
Spring 1993
Volume 59 • Number 2

ARTICLES

Been-Heres Versus Come-Heres: Negotiating Conflicting Community Identities **156**
Daphne Spain

Subsidized Housing and Racial Change in Yonkers, New York **172**
George Galster and Heather Keeney

Establishing Urban Land Markets in the People's Republic of China **182**
David E. Dowall

The Sources of Suburban Employment Growth **193**
Sammis B. White, Lisa S. Binkley, and Jeffrey D. Osterman

Reducing Flood Losses: Local Planning and Land Use Controls **205**
James M. Holway and Raymond J. Burby

DEPARTMENTS

THE LONGER VIEW
Planners, Heal Thyselves
Planning Education, Educators, and Practitioners in the Next Century **139**
Edward J. Blakely and Sumner M. Sharpe
The Field as Educator **140**
Seymour J. Mandelbaum
A Plethora of Paradigms? **142**
Michael P. Brooks
The Paradigm of Empowerment **145**
Bruce W. McClendon
Themes from Thymos **147**
Stuart Meck
The Dilemmas of the Times **149**
Linda C. Dalton
Schools for Today, Graduates for Tomorrow **152**
Sergio Rodriguez

COMMENTARY
Between Self and Culture or What Are Biographies of Planners About? **217**
Donald A. Krueckeberg

PLANNER'S NOTEBOOK
Sinkhole Hazards and Risk Assessment in a Planning Context **221**
Phillip R. Kemmerly

COMPUTER REPORT
Implementing GIS for Planning: Lessons from the History of Technological Innovation **230**
Judith E. Innes and David M. Simpson

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

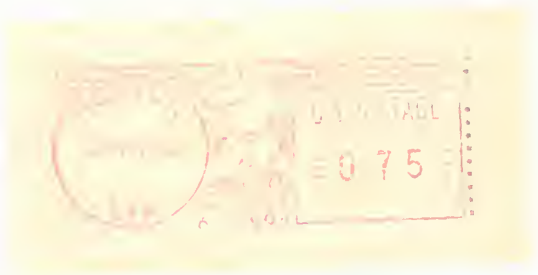
Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116



Leonard ADams
Gov. Docs. Coll.
University Libr.
University of Mass.
Amherst, MA 01003

MASS. STL1.3: 993/3 V

SELECTED ACQUISTIONS

MAY - JUNE 1993

COLLECTION
AUG 2 1993
University of Massachusetts
Depository Copy

STATE TRANSPORTATION LIBRARY

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000

Toby Pearlstein
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Lynn Matis
Law Librarian

Irene Guthrie
Secretary

AEROBIC EXERCISES.

A-V
RA
781.15
.V64
K372
1991

Voight, Karen.
Karen Voight's firm arms & abs [videorecording]. -- California : Voight Fitness & Dance Center, Inc., 1991.
1 videocassette (40 min.) : sd., col. ; 1/2 in.

1. Aerobic exercises. 2. Video recordings. 3. Physical fitness. 4. Exercise.

07 JUN 93 26239765 TLBAsc

AEROBIC EXERCISES.

A-V
RA
781.15
.V64
K37
1991

Voight, Karen.
Karen Voight's lean legs & buns [videorecording] / Karen Voight. -- [California] : Voight Fitness & Dance Center, Inc., 1991.
1 videocassette (45 min.) : sd., col. ; 1/2 in.

1. Aerobic exercises. 2. Step aerobics. 3. Physical fitness. 4. Exercise.

13 MAY 93 27805884 TLBAsc

AEROBIC EXERCISES.

A-V
RA
781.15
.L68
1991

Lower body workout [videorecording] / Time-Life Video and Weight Watchers International Inc. ; producer, Chiz Schultz ; writer/co-producer, Valerie Shepherd ; director, Eamon Harrington. -- [Alexandria, VA] : Time-Life Video, c1991.
1 videocassette (45 min.) : sd., col. ; 1/2 in. -- (Weight Watchers easy shape-up)

1. Exercise. 2. Reducing exercises. 3. Aerobic exercises.

Rev-1 5-13-93 TLBAsc

AEROBIC EXERCISES.

A-V
RA
781.15
.U66
1991

Upper body workout [videorecording] / Time-Life Video and Weight Watchers International Inc. ; producer, Chiz Schultz ; writer/co-producer, Valerie Shepherd ; director, Eamon Harrington. -- [Alexandria, VA] : Time-Life Video, c1991.
1 videocassette (45 min.) : sd., col. ; 1/2 in. -- (Weight Watchers easy shape-up)

1. Exercise. 2. Reducing exercises. 3. Aerobic exercises.

Rev-1 5-14-93 TLBAsc

AEROBIC EXERCISES.

A-V
RA
781.15
.W44
1993

Weight Watchers easy shape-up ; plus, healthy back & waist workout [videorecording] / Time-Life Video and Weight Watchers International Inc. ; producer, Chiz Schultz ; writer/co-producer, Valerie Shepard ; director, Eamon Harrington. -- [New York, N.Y.?] : Time-Life Video, c1991.
1 videocassette (ca. 50 min.) : sd., col. ; 1/2 in.

1. Exercise. 2. Low impact aerobic exercises. 3. Reducing exercises. 4. Aerobic exercises.

Rev-2 6-21-93 TLBAsc

AIRPORTS--ACCESS ROADS.

TL
725.3
.A2
A37
1991

Airport roadway guide signs : a proposed recommended practice / by ITE Technical Council Committee 5D-1, Jim C. Lee, chairperson. -- Washington, D.C. : Institute of Transportation Engineers, c1991.
53 p. : ill. ; 28 cm. -- (ITE publ. ; RP-014)

1. Airports--Access roads. 2. Traffic signs and signals. 3. Access to airports.

15 JUN 93 27300910 TLBAsc

AUDIBLE PEDESTRIAN TRAFFIC SIGNALS.

TE
228
.A92
1985

Audible pedestrian traffic signals for the blind. -- Washington D.C., USA : Institute of Transportation Engineers, [1985?]
1 v. (various pagings) : ill. ; 28 cm. -- (Issue paper / Institute of Transportation Engineers ; IP-003)

1. Audible pedestrian traffic signals. 2. Traffic signs and signals --Technological innovations. 3. Blind --Services for. 4. Visually handicapped--Services for.

22 JUN 93 25328323 TLBAsc

BOSTON POST ROADS--NEW ENGLAND--HISTORY.

HE
356
.A11
J46
1913

Jenkins, Stephen, 1857-1913.
The old Boston post road, by Stephen Jenkins ... with 200 illustrations and maps. New York, London, G. P. Putnam's sons, 1913.
xxiv p., 1 l., 453 p. : front., plates, maps (part fold.) facsims. ; 23 cm.

1. Roads--New England. 2. Roads--New York (State) 3. Boston Post Roads--History. 4. Boston Post Roads--New England--History. 5. Boston Post Roads--New York (State)--History.

15 JUN 93 863163 TLBAsc 13-25381

BRIDGES, ALUMINUM--DESIGN AND CONSTRUCTION.

REF.
TG
310
.A43
G84
1991

American Association of State Highway and Transportation Officials. Highway Subcommittee on Bridges and Structures.
Guide specifications for aluminum highway bridges, 1991. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1991.
xiv, 94 p. : ill. ; 28 cm.

1. Bridges, Aluminum--Design and construction. 2. Bridges, Aluminum--Specifications.

20 MAY 93 25292883 TLBAsc

BRIDGES, CONCRETE--MAINTENANCE AND REPAIR--HANDBOOKS, MANUALS, ETC.

TG
335
.M36
1992

Manual for corrosion protection of concrete components in bridges / AASHTO-AGC-ARTBA Joint Committee, Subcommittee on New Highway Materials, Task Force 32. -- [Washington, D.C. : American Association of State Highway and Transportation Officials, 1992]
ix, 102, [106] p. : ill. ; 28 cm.

1. Bridges, Concrete--Maintenance and repair--Handbooks, manuals, etc. 2. Bridges, Concrete--Floors--Catbodic protsction--Handbooks, manuals, etc.

30 JUN 93 28151476 TLBAsc

BRIDGES--SPECIFICATIONS.

REF.
TG
310
.A43
G847
1993

Guide specifications for horizontally curved highway bridges. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1993.
ix, 111 p. : ill. ; 28 cm.

1. Bridges--Specifications. 2. Bridges--Design--Handbooks, manuals, etc.

30 JUN 93 27933347 TLBAsc

BRIDGES--TEXAS--MIDLAND COUNTY--MAINTENANCE AND REPAIR.

TG
315
.K42
E92
1992

Keating, Peter B.
Evaluation and repair of fatigue damage to Midland County bridges / Peter B. Keating, Allen R. Crozier. -- College Station, Tex. : Texas Transportation Institute, the Texas A&M University System ; Springfield, Va. : Available through the National Technical Information Service, [1992]
iii, 418, [2] p. : ill. ; 28 cm. -- (Research report ; no. 1313-1F)
STRN: TX-92/1313-1F
1. Bridges--Texas--Midland County--Maintenance and repair. 2. Bridges--Texas--Midland County--Live loads--Testing. 3. Reinforcing bars--Fatigue.

10 MAY 93 27475570 TLBAsc

BUS LINES--PLANNING.

HE
5623
.G52
B87
1989

Giannopoulos, G. A., 1946-
Bus planning and operation in urban areas : a practical guide / G.A. Giannopoulos. -- Aldershot, Hants, England ; Brookfield, Vt., USA : Avebury, c1989.
xiv, 370 p. : ill. ; 23 cm.
ISBN 0-566-05673-9

1. Bus lines--Planning. 2. Bus lines--Handbooks, manuals, etc.

17 MAY 93 20093041 TLBAsc 89-37413

CAPITAL BUDGET--UNITED STATES.

HJ
9011
.A2
B68
1993

Bowyer, Robert A.
Capital improvements programs : linking budgeting and planning / Robert A. Bowyer. -- Chicago, IL (1313 E. 60th St., Chicago 60637) : American Planning Association, Planning Advisory Service, c1993.
53 p. : ill. ; 28 cm. -- (Planning Advisory Service report ; no. 442)

1. Capital budget--United States. 2. Finance, Public--United States. 3. City planning--United States.

13 MAY 93 27688125 TLBAsc

CITY PLANNING--MASSACHUSETTS.

Oversize
HT
167.5
.M4
M32
1989

Mackin, Anne.
A design primer for cities and towns / Anne Mackin, Alex Krieger. -- [Boston] : Massachusetts Council on the Arts and Humanities, [1989]
80 p. : ill., maps (some col.) ; 30 cm.

1. City planning--Citizen participation. 2. City planning--Handbooks, manuals, etc. 3. City planning--Massachusetts.

22 JUN 93 21140634 TLEAsc 90-620888

DRIVEWAYS--DESIGN AND CONSTRUCTION.

TE
279.3
.G85
1987

Guidelines for driveway location & design : a recommended practice / by ITE Technical Committee 5B-13. -- Washington, D.C., USA : Institute of Transportation Engineers, c1987.
iv, 23 p. : ill. ; 28 cm. -- (ITE publication ; no. RP-006B)

1. Driveways--Design and construction.

17 MAY 93 21877137 TLBAsc 89-211599

ECONOMIC FORECASTING—MASSACHUSETTS--BOSTON.

HC
108
.B7
B72
1990

Outlook for Boston and the Bay State : economy at crossroads / Boston Redevelopment Authority, Policy Development and Research Department ; with the collaboration of Merc Webb ... [et al.]. -- Rev. Feb 9, 1990. -- ... [et al.]. -- Boston : The Authority, [1990] 69 leaves : ill., maps ; 28 cm.

1. Economic forecasting—Massachusetts--Boston. 2. Boston (Mass.)--Economic policy--Planning. 3. Boston (Mass.)--Economic conditions. 4. Massachusetts--Economic policy--Planning.

22 JUN 93 21997296 TLBAsc

EXPRESS HIGHWAYS—ECONOMIC ASPECTS--TEXAS.

HB
336
.E3
E364
1992

Economic impacts of highway bypasses / S. Johann Andersen ... [et al.] ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992] ix, 36 p. : ill. ; 28 cm. -- (Research report ; 1247-3F)
STRN: FHWA/TX-92+1247-3F

23 JUN 93 28284432 TLBAsc SEE NEXT CRD

EXPRESS HIGHWAYS—ECONOMIC ASPECTS--TEXAS--TARRANT COUNTY.

HE
336
.E3
B834
1991

Buffington, Jesse L.
Estimated economic impact of the proposed improvement of State Highway 199 in Tarrant County, Texas / by J.L. Buffington, L.M. Crane, P. Salleh. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System, 1991.
xiv, 181 p. : ill. (some col.) ; 28 cm. -- (Research report ; 1904-1F)
1. Roads—Design and construction--Economic aspects--Texas--Tarrant County. 2. Express highways--Economic aspects--Texas--Tarrant County. 3. Employment forecasting--Texas--Tarrant County. 4. Population forecasting--Texas--Tarran t County.

15 JUN 93 27957714 TLBAsc

PORT POINT CHANNEL AREA (BOSTON, MASS.)

HB
4491
.B735
P761
1992

South Boston Piers/Fort Point Channel transit project : social, economic and environmental impact assessment results report / prepared and submitted by Rizzo Associates, Inc. and URS Consultants, Inc. -- (Boston, Mass.) : Rizzo Associates, 1992.
xv, E-10, 1-63, 2-19, 3-22, 4-33, 5-24, 6-15, 7-28, 8-15, 9-17, 10-16 : ill., maps ; 28 cm.

1. Local transit--Massachusetts--Boston Metropolitan Area--Planning. 2. Fort Point Channel Area (Boston, Mass.) 3. South Boston Area (Boston, Mass.)

Rev-1 6-30-93 TLBAsc

HIGH OCCUPANCY VEHICLE LANES.

HB
336
.H4
E33
1988

The Effectiveness of high-occupancy vehicle facilities : an informational report. -- Washington, D.C., USA (525 School St., S.W., Suite 410, Washington 20024-2729) : Institute of Transportation Engineers, c1988.
29 p. ; 28 cm. -- (ITE publ. ; no. IR-050)

1. High occupancy vehicle lanes.

19 MAY 93 21336316 TLBAec 89-212017

HIGH OCCUPANCY VEHICLE LANES.

REF.
HB
336
.H4
G84
1992

Guide for the design of high occupancy vehicle facilities / [prepared by the Task Force for Public Transportation Facilities Design of the AASHTO Subcommittee on Design]. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1992.
ix, 92 p. : ill. ; 28 cm.
ISBN 1-56051-013-7

1. High occupancy vehicle lanes. 2. Bus lanes.

10 MAY 93 26003736 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--DESIGN AND CONSTRUCTION.

HE
336
.H4
D47
1992

Design features of high-occupancy vehicle lanes : an informational report / by ITE Technical Council Committee 5C-11 ; Timothy J. Lomax, chairperson. -- Washington, D.C. : Institute of Transportation Engineers, c1992.
vi, 34 p. : ill. ; 28 cm. -- (ITE publ. ; no. IR-055)

1. High occupancy vehicle lanes--Design and construction. 2. Bus lanes--Design and construction.

19 MAY 93 26579576 TLBAsc

HIGHWAY CAPACITY--CONGRESSES.

HB
131
.T687r
no.1365

Highway capacity and traffic flow. -- Washington, D.C. : National Academy Press, 1992.
v, 154 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1365)
ISBN 0-309-05404-4

1. Highway capacity--Congresses. 2. Traffic flow--Congresses.

09 JUN 93 26852109 TLBAsc 92-35073

HIGHWAY COMMUNICATIONS--TECHNOLOGICAL INNOVATIONS.

TH
228.3
.I574
1992

Intelligent vehicle highway systems : review of field trails : report / prepared by an OECD scientific expert group. -- Paris : Organisation for Economic Co-operation and Development ; [Washington, D.C. : OECD Publications and Information Centre, distributor], 1992.
102 p. : ill. ; 27 cm. -- (Road transport research)
ISBN 9264137696
1. Highway communications--Technological innovations. 2. Motor vehicles--Electronic equipment. 3. Electronic traffic controls. 4. Motor vehicles--Automatic location systems.

20 MAY 93 27025364 TLBAsc

LOCAL TRANSIT--UNITED STATES--FARES.

REF.
HE
4341
.T74
1993

Transit fare summary as of January 1, 1993. -- [Washington, D.C.] : American Public Transit Association, [1993]
ca. 150 p. in various pagings ; 22 x 28 cm.

1. Local transit--United States--Fares. 2. Bus lines--United States--Fares. 3. Local transit--United States--Statistics.

21 JUN 93 28168440 TLBAsc

HIGHWAY PLANNING.

TE
175
.I57
P62
1988

Institute of Transportation Engineers. Planning urban arterial and freeway systems : a recommended practice / prepared by Committee 6Y-19. -- Washington, D.C., USA : The Institute, c1988.
x, 60 p. : ill. ; 28 cm. -- (ITE publ. ; no. RP-015A)

1. Highway planning. 2. Urban transportation--Planning. 3. Express highways.

28 MAY 93 18710150 TLBAsc 89-211613

MOTOR VEHICLES--AUTOMATIC CONTROL.

HE
131
.T687r
no.1358

Vehicle routing, traveler ADIS, network modeling, and advanced control systems / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1992.
v, 102 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1358)
ISBN 0-309-05224-6 (pbk.)

1. Motor vehicles--Automatic control. 2. Traffic engineering. 3. Transportation, Automotive--Communication systems.

09 JUN 93 26674858 TLBAsc 92-21411

INTERNET (COMPUTER NETWORK)

TK
5105.875
.I57
K86
1992

Krol, Ed.
The whole Internet : user's guide & catalog / Ed Krol. -- [Corr. ed.]. -- Sebastopol, CA : O'Reilly & Associates, c1992.
xxiv, 376 p. : ill. ; 24 cm. -- (A Nutshell handbook)
ISBN 1-56592-025-2

1. Internet (Computer network) 2. Internet (Computer network)--Handbooks, manuals, etc. 3. Computer networks--Handbooks, manuals, etc.

22 JUN 93 27031829 TLBAsc

MOTOR VEHICLES--MOTORS (COMPRESSED-GAS).

TL
229
.G3
E97
1992 v.1

Euritt, Mark A.
Cost-effectiveness analysis of TxDOT CNG fleet conversion. Volume I / by Mark A. Euritt, Dean B. Taylor, Hani Mahmassani. -- Austin : Center for Transportation Research, the University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 176 p. ; 28 cm. -- (Research report ; no. 983-2/2, vol. I)
STRN: TX-92+983-2/vol. 1
1. Motor vehicles--Texas--Motors (Compressed-gas). 2. Motor vehicles--Texas--Cost of operation. 3. Air quality management--Texas. 4. Motor vehicle fleet s--Cost effectiveness. 5. Motor veh icles--Motors (Compressed-g as).

12 MAY 93 27723331 TLBAsc

JOB CREATION--MASSACHUSETTS.

HC
107
.M4
C56
1993

Choosing to compete : a statewide strategy for job creation and economic growth. -- Boston, Mass. : Executive Office of Economic Affairs, c1993.
192 p. : ill., maps ; 28 cm.

1. Job creation--Massachusetts. 2. Massachusetts--Economic policy. 3. Economic forecasting--Massachusetts.

22 JUN 93 27798103 TLBAsc

ORGANIZATIONAL CHANGE.

HD
58.8
.P47
L52
1992

Peters, Thomas J.
Liberation management : necessary disorganization for the nanosecond nineties / Tom Peters. -- 1st ed. -- New York : A. A. Knopf, 1992.
xxxiv, 834 p. : ill. ; 25 cm.
ISBN 0-394-55998-1

1. Organizational change. 2. Organizational effectiveness. 3. Work groups. 4. Information technology.

Rev-1 5-28-93 TLBAsc 90-53071

ORGANIZATIONAL CHANGE.

HD
58.8
.T65
R47
1993

Tomasko, Robert M.
Rethinking the corporation : the architecture of change / Robert M. Tomasko. -- New York : AMACOM, c1993.
ix, 213 p. : ill. ; 24 cm.
ISBN 0-8144-5022-9

1. Organizational change. 2. Corporate reorganizations.

07 JUN 93 27381522 TLBAsc 93-9246

PILING (CIVIL ENGINEERING)--TESTING.

TA
780
.C66
R47
1992

Clowers, Karen A.
Response of piles in loess to lateral loads / Karen A. Clowers and Jeffrey A. Frantzen. -- [Topeka, Kan.] : Kansas Dept. of Transportation, Bureau of Materials and Research, [1992]
vii, 75 p. : ill. ; 28 cm.
STRN: KS-92/4

1. Piling (Civil engineering)--Testing. 2. Loess--Kansas. 3. Soils--Kansas--Testing.

07 JUN 93 27939592 TLBAsc

PAVEMENTS, ASPHALT--DESIGN AND CONSTRUCTION.

TH
270
.D474
1992

Design and use of superior asphalt binders / by Richard P. Davison ... [et al.]. -- Rev. August, 1992. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University, [1991]
xvii, 184 p. : ill. ; 28 cm. -- (Research report ; 1248-1F)
STRN: FHWA/TX-92/1248-1F

1. Binders (Materials). 2. Pavements, Asphalt--Design and construction. 3. Pavements, Asphalt--Maintenance and repair.

Rev-1 6-29-93 TLBAsc

ROAD DRAINAGE--HANDBOOKS, MANUALS, ETC.

REF.
Oversize
TE
215
.A43
H53
1992

American Association of State Highway and Transportation Officials. Task Force on Hydrology and Hydraulics.
Highway drainage guidelines / [prepared by the Task Force on Hydrology and Hydraulics, AASHTO Highway Subcommittee on Design]. -- Washington, D.C. : American Association of State Highway and Transportation Officials, 1992.
1 v. (looseleaf) : ill. ; 30 cm.
ISBN 1-56051-018-8

10 MAY 93 26912285 TLBAsc SEE NEXT CRD

PAVEMENTS, CONCRETE--MAINTENANCE AND REPAIR.

TE
278
.D67
C52
1992

Dossey, Terry.
Characterization of concrete properties with age / by Terry Dossey, B. Frank McCullough. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vi, 43 p. : ill. ; 28 cm. -- (Research report ; 1244-2)
STRN: FHWA/TX-92+1244-2

1. Pavements, Concrete--Maintenance and repair. 2. Pavements, Concrete--Performance. 3. Concrete--Maintenance and repair.

12 MAY 93 27878166 TLBAsc

ROADS--SAFETY MEASURES.

HE
131
.T687r
no.1367

Development and evaluation of roadside safety features. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1992.
v, 101 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1367)
ISBN 0-309-05408-7

1. Roads--Safety measures. 2. Roads--Guard fences. 3. Roads--Crash cushions. 4. Bridges--Safety measures.

09 JUN 93 26975167 TLBAsc 92-38101

PEDESTRIAN FACILITIES DESIGN--HANDBOOKS, MANUALS, ETC.

REF.
TE
279.5
.A43
G84
1990

American Association of State Highway and Transportation Officials. Task Force for Roadside Safety.
A guide for protective screening of overpass structures / prepared by the Task Force for Roadside Safety of the AASHTO Subcommittee on Design. -- [Washington, D.C.] : American Association of State Highway and Transportation Officials, c1990.
viii, 16 p. : ill. ; 22 cm.

1. Pedestrian facilities design--Handbooks, manuals, etc. 2. Elevated highways--Safety measures--Handbooks, manuals, etc.

Rev-1 5-11-93 TLBAsc

ROADSIDE REST AREAS--UNITED STATES--MANAGEMENT.

REF.
TE
178.8
.A43
F56
1990

American Association of State Highway and Transportation Officials. Standing Committee on Highways. Task Force on Commercialization of Interstate Highway Rest Areas.
Final report of the AASHTO Standing Committee on Highways Task Force on Commercialization of Interstate Highway Rest Areas. -- Washington, D.C. : The Association, [1990?]
13 p. ; 28 cm.

1. Roadside rest areas--United States--Management.

Rev-1 5-12-93 TLBAsc

ROUTE 9 (MASS.)

HE
356.5
.B75
P56
1992

Pioneer Valley Planning Commission (Mass.)
Route 9 corridor study / prepared by the Pioneer Valley Planning Commission. -- [Springfield, Mass.] : The Commission, 1992
2 v. : ill., maps ; 28 cm.

1. Route 9 (Mass.) 2. Roads--Massachusetts. 3. Traffic flow--Massachusetts.

Rev-1 6-22-93 TLBAsc

RURAL ROADS--MAINTENANCE AND REPAIR--COST EFFECTIVENESS.

TE
228.5
.M45
E92
1992

Memmott, Jeffery L. (Jeffery Lynn)
Evaluation of upgrade to standards requirements for FM highways in Texas / by Jeffery L. Memmott and James W. Hanks ; sponsored by Texas Department of Transportation in cooperation with U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xii, 98 p. : ill. ; 28 cm. -- (Research report ; 1229-1F)
STRN: FHWA/TX-93/1229-1F

23 JUN 93 28253109 TLBAsc SEE NEXT CRD

SALT MARSH ECOLOGY--CALIFORNIA--HANDBOOKS, MANUALS, ETC.

QH
541.5
.S24
S24
1991

Salt marsh restoration, rehabilitation, and creation techniques for Caltrans construction projects : interim guidance manual / by Robert D. Charney ... [et al.]. -- [Sacramento, Calif. : California Dept. of Transportation, Division of New Technology, Materials and Research, 1991]
4 v. : ill. ; 28 cm.
STRN: FHWA/CA/TL-93/12D
1. Salt marsh ecology--California--Handbooks, manuals, etc. 2. Roads--Environmental aspects--California--Handbooks, manuals, etc. 3. Roads--California--Design and construction--Handbooks, manuals, etc. 4. Marsh ecology--California--Handbooks, manuals, etc.

01 JUN 93 28080644 TLBAsc

SCOUR AT BRIDGES.

HE
131
.T6R7r
no.1350

Hydrology and bridge scour : a peer reviewed publication of the Transportation Research Board. -- Washington, D.C. : National Transportation Research Board, National Research Council, 1992.
v, 46 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1350)
ISBN 0-309-05214-9

1. Scour at bridges.

09 JUN 93 26351102 TLBAsc 92-28099

SHIPPING--UNITED STATES--HISTORY.

Oversize
HE
745
.M32
A84
1981

Maddocks, Melvin.
The Atlantic crossing / by Melvin Maddocks and the editors of Time-Life Books. -- Alexandria, Va. : Time-Life Books, c1981.
176 p. : ill. ; 29 cm. -- (The Seafarers)
ISBN 0-8094-2726-5

1. Shipping--United States--History. 2. Navigation--United States--History. 3. United States--Commerce--History. 4. United States--History.

18 MAY 93 7006593 TLBAsc 80-26891rR3

STEEL--WELDING

REF.
TS
227
.A43
S76
1992

American Welding Society. Structural Welding Committee.
Structural welding code--reinforcing steel : including metal inserts and connections in reinforced concrete construction / prepared by AWS Structural Welding Committee ; under the direction of AWS Technical Activities Committee. -- 4th ed. -- Miami : American Welding Society, c1992.
ix, 39 p. : ill. ; 28 cm. -- (ANSI/AWS ; D1.4-92.)
ISBN 0-87171-378-0
1. Steel--Welding 2. Reinforced concrete construction--Standards 3. Welding--Standards.

02 JUN 93 26887737 TLBAsc

TOURIST TRADE--UNITED STATES.

G
155
.U6
G47
1993

Getting started : how to succeed in heritage tourism / prepared by National Trust for Historic Preservation. -- [Washington, D.C.] : National Trust for Historic Preservation in the United States, c1993.
[45] p. : ill. ; 28 cm.

1. Tourist trade--United States. 2. Advertising--Tourist trade. 3. Historic sites--United States.

Rev-1 5-13-93 TLBAsc

TRAFFIC CIRCLES.

TE
176.5
.U83
1992

Use of roundabouts : an informational report / prepared by ITE Technical Council Committee 5B-17. -- Washington, D.C. : Institute of Transportation Engineers, c1992.
41, 8 p. : ill. ; 28 cm. -- (ITE publication ; no. IR-056)

1. Traffic circles. 2. Traffic flow.

18 MAY 93 28125192 TLBAsc

TRAFFIC CONGESTION--UNITED STATES.

HE
336
.C64
D68
1992

Downs, Anthony.
Stuck in traffic : coping with peak-hour traffic congestion / Anthony Downs. — Washington, D.C. : Brookings Institution ; Cambridge, Mass. : Lincoln Institute of Land Policy, c1992.
xi, 210 p. : ill. ; 24 cm.
ISBN 0-8157-1924-8 (cloth : alk. paper)

1. Traffic congestion--United States. 2. Traffic flow--United States. 3. Land use, Urban--United States.

18 MAY 93 25675642 TLBAsc 92-12692

TRAFFIC ENGINEERING.

HE
336
.T7
T72
1991

Traffic access and impact studies for site development : a recommended practice / prepared by the Transportation Planners Council. — Washington, D.C., USA (525 School St., S.W., Suite 410, Washington 20024-2729) : Institute of Transportation Engineers, c1991.
vii, 52 p. : ill. ; 28 cm. -- (ITE publ. ; no. RP-020B)

1. Traffic engineering. 2. Traffic estimation. 3. Real estate development. 4. Building sites.

22 JUN 93 24291889 TLBAsc

TRAFFIC ENGINEERING--CONGRESSES.

HE
131
.T687r
no.1360

Traffic operations. -- Washington, D.C. : Transportation Research Board, 1992.
vii, 157 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1360)
ISBN 0-309-05223-8

1. Traffic engineering--Congresses. 2. Traffic engineering--United States--Congresses.

09 JUN 93 26587019 TLBAsc 92-32759

TRAFFIC ENGINEERING--HANDBOOKS, MANUALS, ETC.

REF.
Overeize
HE
333
.T62
1992

Traffic engineering handbook / Institute of Transportation Engineers ; James L. Pline, editor. -- 4th ed. -- Englewood Cliffs, N.Y. : Prentice-Hall, c1992.
xii, 481 p. : ill. ; 29 cm.
ISBN 0-13-926791-3

1. Traffic engineering--Handbooks, manuals, etc.

17 MAY 93 22983335 TLBAsc 90-28690

TRAFFIC FLOW.

HE
336
.T7
I83
1988

Management of damaging traffic queues : an informational report / by ITE Technical Council Committee 4A-24. -- Washington, D.C. : Institute of Transportation Engineers, c1988.
[111], 16 p. ; 28 cm. -- (ITE publication ; no. IR-051)

1. Traffic flow. 2. Traffic congestion.

18 MAY 93 27388106 TLBAsc

TRAFFIC FLOW.

A-V
HE
336
.C64
063
1991

Open roads, a look at freeway incident management [videorecording]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Highway Administration, 1991.
1 videocassette (19 min.) : sd., col. ; 1/2 in.

1. Express highways--Management. 2. Disabled vehicles on express highways. 3. Traffic flow. 4. Traffic congestion.

19 MAY 93 27596394 TLBAsc

TRAFFIC FLOW--MATHEMATICAL MODELS.

HE
336
.T7
M39
1990

May, Adolf D. (Adolf Darlington), 1927-
Traffic flow fundamentals / Adolf D. May. -- Englewood Cliffs, N.J. : Prentice Hall, c1990.
xi, 464 p. : ill. ; 24 cm.
ISBN 0-13-926072-2

1. Traffic flow--Mathematical models.

18 MAY 93 20354224 TLBAsc 89-39687

TRAFFIC FLOW--MEASUREMENT--DATA PROCESSING--STANDARDS.

HE
369
.A43
A27
1992

American Association of State Highway and Transportation Officials. Task Force on Traffic Monitoring Standards.
AASHTO guidelines for traffic data programs / prepared by the Joint Task Force on Traffic Monitoring Standards of the AASHTO Highway Subcommittee on Traffic Engineering. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1992.
114 p. : ill. ; 28 cm.
ISBN 1-56051-054-4
1. Traffic flow--Measurement--Data processing--Standards. 2. Traffic surveys--Data processing.

29 JUN 93 26912297 TLBAsc

TRAFFIC SIGNS AND SIGNALS.

Oversize
TE
228
.K44
M36
1991

Kell, James H.
Manual of traffic signal design / James H. Kell, Iris J. Fullerton. -- 2nd ed. -- Englewood Cliffs, N.J. : Prentice Hall, c1991.
x, 245 p. : ill. ; 29 cm.
ISBN 0-13-554338-X

1. Traffic signs and signals.

20 MAY 93 21483595 TLBAsc 90-36556

TRAFFIC SIGNS AND SIGNALS.

HE
131
.T687r
no.1368

Traffic control devices and highway visibility / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1992.
v, 73 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1368)
ISBN 0-309-05409-5

1. Traffic signs and signals. 2. Railroads--Crossings--Safety measures. 3. Roads--Visibility.

09 JUN 93 27011625 TLBAsc 92-40450

TRAFFIC SIGNS AND SIGNALS--EVALUATION.

TE
228
.S47
1991

Service life of retroreflective traffic signs / [K.L. Black ... et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
v, 107 p. ; 28 cm.
STRN: FHWA-RD-90-101

1. Traffic signs and signals--Evaluation. 2. Reflectors (Safety devices)--Evaluation. 3. Reflective materials--Evaluation. 4. Service life (Engineering)

23 JUN 93 25456624 TLBAsc

TRANSPORTATION ENGINEERING--CONGRESSES.

HE
203
.T72
1992

Transportation engineering in a new era : issue papers for the ITE 1992 International Conference, Monterey, California. -- Washington, D.C. : Institute of Transportation Engineers, c1992.
[vi], 223 p. : ill., maps, ; 28 cm. -- (ITE publ. ; no. PP-028)
1. Transportation engineering--Congresses. 2. Transportation--Planning--Congresses. 3. Land use--Planning--Congresses. 4. Transportation--Environmental aspects--Congresses. 5. Traffic congestion--Congresses. 6. Commuting--Congresses. 7. Electronic traffic controls--Congresses.

16 JUN 93 27057904 TLBAsc

TRANSPORTATION ENGINEERING--VOCATIONAL GUIDANCE.

A-V
HD
8039
.T7
C37
1989

Careers in transportation engineering [sound recording]. -- Washington, D.C. : Institute of Transportation Engineers c1989.
1 videocassette (18 min.) : sd., col. ; 1/2 in.

1. Traffic engineering--Vocational guidance. 2. Transportation engineering--Vocational guidance.

01 JUN 93 21568403 TLBAsc

TRANSPORTATION--PLANNING--HANDBOOKS, MANUALS, ETC.

Oversize
HE
152.5
.T73
1992

Transportation planning handbook / John D. Edwards, Jr., editor. -- Englewood Cliffs, N.J. : Prentice-Hall, c1992.
xii, 525 p. : ill. ; 29 cm.
ISBN 0-13-928052-9

1. Transportation--Planning--Handbooks, manuals, etc.

18 MAY 93 24142482 TLBAsc 91-25986

TRUCKING.

HE
5623
.O32
U72
1992

Ogden, Kenneth Wade.
Urban goods movement : a guide to policy and planning / K.W. Ogden. -- Aldershot, Hants, England : Avebury Technical ; Brookfield, Vt., USA : Gower Pub. Co., c1992.
xix, 397 p. : ill. ; 25 cm.
ISBN 1-85742-029-2

1. Trucking. 2. Trucking--Government policy. 3. Urban transportation policy.

22 JUN 93 24953420 TLBAsc 91-43393

URBAN TRANSPORTATION.

HE
308
.G7
1992

Public transportation / editors, George E. Gray, Lester A. Hoel. -- 2nd ed. -- Englewood Cliffs, N.J. : Prentice Hall, 1992.
xvii, 750 p. : ill. ; 25 cm.
ISBN 0-13-726381-3

1. Urban transportation. 2. Local transit. 3. Transportation--Planning.

18 MAY 93 23080440 TLBAsc 91-2063

AMERICAN DEMOGRAPHICS

JUNE 1993 VOL. 15, NO. 6 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

The Demographics of Decision Makers 26

Chief executives get the attention, but lower-level managers make most of the daily decisions that run America's businesses. If you sell to businesses, these are your customers. ..... *by Judith Waldrop*

Born to Shop 34

Children's lifetime purchases may be worth $100,000 to a retailer. If you know how consumer habits develop, you'll make a good first impression on kids. ..... *by James U. McNeal and Chyon-Hwa Yeh*

'Round Midnight 40

People who work, shop, and watch TV in "fringe" hours are a diverse group. Working women are earliest to bed. Night owls are usually single, except on Saturday. ..... *by John P. Robinson*

What Does "Hispanic" Mean? 46

Hispanic Americans are united in some ways, but diverse in others. How marketers define "Hispanic" depends on what they want to accomplish and how much money they have. ..... *by Patricia Braus*

How to Use Local Census Data 52

Working with census data for the first time? Here are some simple techniques of data analysis to ensure a successful presentation. ..... *by Dowell Myers*

BUSINESS REPORTS

Census Data in Jeopardy 9

Canadian Markets 12

Thriving Plains Towns 15

List-Keeping Is Big Business 20

Getting the Best Car Deal 20

Hispanic Sports Participation 22

Appealing to Asian Homebuyers 23

DEPARTMENTS

Publisher's Note
A New Land of Opportunity 2

Seasons
Movers Today 4

Dear Dr. Demo
Slippery Suburbs 6

The Lincoln Sample 56

Letters 57

Demographic Forecasts
Movers of Tomorrow 59

New Frontiers
Let Us Pray 60

AMERICAN DEMOGRAPHICS

JULY 1993 VOL. 15, NO. 7 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

Mad Money 26

Most Americans still have some money to burn. In fact, new estimates show that discretionary income averaged more than $4,300 per person in 1991. ..... *by Cheryl Russell and Thomas G. Exter*

Getting Professional Help 34

Americans still have the do-it-yourself spirit, but a new survey shows that we turn to professionals out of a lack of know-how, not a lack of time. ..... *by Jan Larson*

The Ultimate Cooking Appliance 40

The quest for more convenient meals has led Americans from cake mixes to microwave ovens. Now they are discovering the ultimate appliance—the takeout restaurant. ..... *by Harry Balzer*

Healing Without Doctors 46

Herbal medicines and other alternative cures appeal to aging Americans who seek better ways to treat chronic conditions. The market is growing fast, and so is the controversy. ..... *by Susan Mitchell*

How to Unmask Your Customers 52

Do you have lots of customers and limited information about them? It could pay to enhance your customer files with other data. To find out more, take our quiz. ..... *by Thomas Kobak*

BUSINESS REPORTS

Sex, Lies, and Surveys 9

What Makes a Sales Superstar? 12

What We Need vs. What We Want 13

Hispanic Heroes 16

Deadbeat Dads, Dropout Kids 18

Growth Isn't Always Good 20

Demogaffes: Welcome Back, Baker 22

DEPARTMENTS

Editor's Note
American Spending Quiz 2

Seasons
Under the Sun 4

Multimedia
From CD to DCC 6

The Lincoln Sample 56

Letters 57

Demographic Forecasts
Putters and Steppers 59

New Frontiers
Old Folks' Homes 60

BIKECENTENNIAL

BICYCLE FORUM

April 1993 **The journal of bicycle advocacy: since 1978** NUMBER 32

FEATURES

Q & A: Surveys 4
by P. McLaughlin & J. Williams

5 Bike Program Ideas 10
by John Williams

DEPARTMENTS

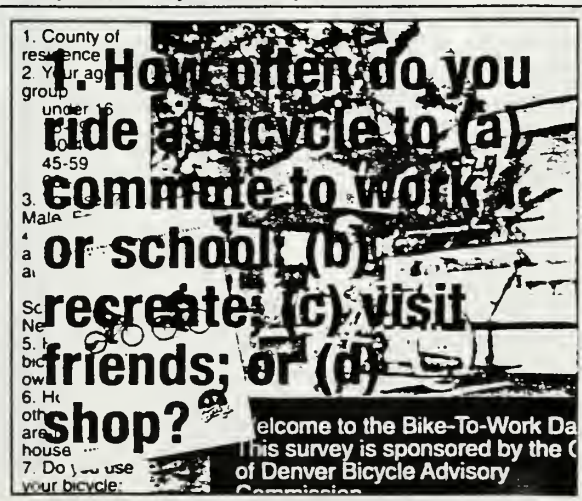
Teletype 1

Readers' Forum 2

What's New? 12

Quarterly Quotes 16

Forum Library 18



Above: Continuing our new **Questions & Answers** *series, this issue includes a 6-page compilation of survey ideas and examples from all over (see page 4 for details). And if you have any survey experience, please let us know. Send us your tips and samples of your surveys today! Photo: Pete*

AMERICAN CITY & COUNTY®

June 1993 Vol. 108, No. 7

COLUMNS

4 **Editor's View** Brussels Sprouts Cause Cancer
10 **Information Technology** Technology Dawns in Rural Counties
12 **Financial Management** Swapping for a Better Rate
14 **Inside Washington** Institutional Homelessness Worries Feds

USCM PROFILE

51 **Populism with Panache**
Louisville, Ky., Mayor Jerry Abramson has built a reputation as a populist known as much for his work in providing affordable housing as for his pro-business approach to economic development. Energy and enthusiasm have been an integral part of his success, and he will need both when he assumes leadership of the U.S. Conference of Mayors.

COVER STORY

26 **Putting the Pieces Together**
Creativity is the key in solving the mounting problems of municipal solid waste disposal. No longer communities locked into one method. In fact, many are finding that a combination of landfilling, recycling, waste-to-energy and composting provides the most workable solution. ☐ **30** Landfill Transformed Into Recreation Area ☐ **38** Waste Not, Want Not ☐ **43** Recycled Asphalt Pavement Puts Scrap Tires to Good Use ☐ **44** Cashing In on Curbside Collection ☐ **47** Variable Disposal Fees Reduce Waste

PUBLIC SAFETY

56 **Between a Rock and a Hard Place**
While prison populations continue to skyrocket and courts demand the easing of inmate overcrowding, governments are seeking new alternatives to offset the high cost of incarceration. ☐ **60** Community-Police Cooperative Reduces Auto Theft in Philly ☐ **62** Bombs (and Drugs) Away: Detection Systems Keep Cities Safe ☐ **65** CANE Enables Narcotics Agents to Spend Less Time Behind Desks ☐ **66** Fanning the Flames of Change ☐ **69** Privatization Extinguishes the High Cost of Fire Service

34

ILLUSTRATION ANNUAL

COMMUNICATION ARTS

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOL. 63, NO
JULY 19

FEATURES

USING THE RIGHT SURVEYING EQUIPMENT REDUCES COSTS 17

HOW MUCH CAN RECYCLING SAVE? 20

9 WAYS TO TRAIN HERBICIDE APPLICATION CREWS 24

MILLING — WITHOUT DAMAGING ROADSIDE GRASS 26

GEOTEXTILES — FACTS YOU NEED TO KNOW 28

EMULSION SEALS AT A LOW COST 29

HOW OHIO REVAMPED ITS PUBLIC HEARINGS 30

HOW FLORIDA DOT USES PARTNERING 31

HOW MARIN COUNTY INVENTORIES TRAFFIC CONTROL DEVICES 33

COOLANT HOSE RESISTS HEAT, ELECTROCHEMICALS 34

ILLINOIS SAVES $1.5 MILLION WITH BRIDGE OVERCOAT 35



BETTER ROADS

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOL. 63, NO. 6
JUNE 199

FEATURES

CLIVE'S RECIPE FOR SUCCESSFUL SNOW AND ICE CONTROL 17

WINTER EQUIPMENT MAINTENANCE: TIPS YOU NEED TO KNOW 18

SENSOR MEASURES VISIBILITY AND PRECIPITATION 19

REDUCE SALT USE WITH LIQUID CALCIUM CHLORIDE 23

COUNTY REDUCES ROADSIDE MAINTENANCE COSTS $100,000 26

WHAT YOU CAN EXPECT FROM FEDERICO F. PEÑA 28

SUBGRADE STABILIZATION METHOD CUTS COSTS BY UP TO 80% 30

WAYNE COUNTY USES IMPACT ATTENUATOR MAINTENANCE VEHICLE 32

WOOD NOISE BARRIERS CUT MNDOT COSTS



CIVIL ENGINEERING
JUNE 1993 VOLUME 63 NUMBER 6

SPECIAL ISSUE: COMPUTERS/GIS

FEATURES

COMPUTER-AIDED LIABILITY Computer software can streamline design and analysis—and increase exposure to liability, even if design problems are caused by imperfect software. *By Lisa Backman* 40

GETTING TO THE NONPOINT SOURCE WITH GIS A geographic information system helped engineers characterize the nonpoint pollution sources that are poisoning Galveston Bay in Texas. *By Hanadi S. Rifai, Charles J. Newell and Philip B. Bedient* 44

LIFELIKE MODEL Computer models accurately predicted the response of a steel high rise in the 1989 Loma Prieta earthquake. *By Abolhassan Astaneh, David Bonowitz and Cheng Chen* 47

RUNWAY REHAB: A CASE FOR CADD Engineers designing a major runway rehabilitation project at Boston's Logan International Airport believed that using computer-aided design and drafting merely to create designs amounted to streamlining only part of the job. *By Stephen M. Benz* 50

SMALL-GOVERNMENT GIS Making the investment in time and money that a quality geographic information system requires can be daunting, but a growing number of state and local governments are showing that it pays off. *By James Denning* 52

LANDFILL ON SCREEN CAD was a big help in design, construction and operation of a landfill expansion project in Iowa. *By Steven R. Roth and John R. Cummings* 55

SHELTER FROM THE STORM Communities with populations under 100,000 may soon have to apply for federal storm-water discharge permits. Here are some ways to reduce the costs. *By Stephen P. Chinn and Martha E. Crow* 58

COLORADO DOME A uniquely shaped building and a demanding site called for precise, innovative design work on the oew Jefferson County Government Center in Golden, Colo. *By Richard Weingardt* 60

MAKING THE LEAP How did your practice's jump into the information age go? A small firm offers notes and lessons from a decade of computer use. *By Jeanine Tanner* 63

METRIC DESIGN: IT'S REAL No longer something to be considered someday and somewhere, metric—the Systeme International—is here. *By Rita Robison* 66

TRICK PLAYS AND TRAPS An excerpt from *Win-Win Negotiating: A Professional's Handbook*, published by ASCE Press. *By O.C. 'Russ' Tirella and Gary D. Bates* 70

CIVIL ENGINEERING
JULY 1993 VOLUME 63 NUMBER 7

SPECIAL ISSUE: OCEA/CONSTRUCTION

FEATURES

PIONEER HIGHWAY The $490 million Glenwood Canyon Project in Colorado—the final link in Interstate 70 and a model for a new kind of environmentally friendly roadway—is the Outstanding Civil Engineering Achievement of 1993. 36

A SOLID-WASTE SOLUTION After 12 years of planning, officials in Broward County, Fla. have succeeded in constructing a $700 million comprehensive resource-recovery system—this year's OCEA Award of Merit. 40

OCEA GOES GREEN Whether it was the type of work or the way it was performed, an environmental focus was common to most of the nominees for this year's Outstanding Civil Engineering Achievement Award. 42

LOCAL WATER, LOCAL CONTROL Economic incentives and empowerment of water users are improving the performance of local irrigation districts. Here are some successful programs that redefine water management techniques. 46

COMPUTER SCHEDULING AND CONSTRUCTION SPECS The advent of microcomputers and new software have made critical-path-method scheduling using computers effective and affordable. *By George Navarrete and Irtishad Ahmad* 50

SHORT-SPAN BRIDGE SOLUTIONS Large bridge failures grab most of the headlines, but our small bridges may be in even more trouble. Buried culverts are one replacement option. *By M. Zoghi* 53

GETTING ALONG: THE GEOTECH AND THE CM Construction managers and geotechnical engineers can come to loggerheads at a job site. Here's how to avoid on-the-job conflict. *By Charles Daugherty* 56

LEAD IS A FOUR-LETTER WORD Removing lead coatings from steel structures is difficult and expensive, but it can and sometimes must be done. Here's how *By Steven Roetter* 58

LONDON LINKAGE The Limehouse Link tunnel in London is both a complex engineering project and a gateway to urban renewal. *By Patrick McCreight, David Scott and George Tamaro* 60

CLOSING THE LOOP Damage from Hurricane Hugo proved to be only a temporary setback during construction of the Cooper River Bridge in Charleston, S.C. *By Raymond McCabe* 64

Journal of
Urban Planning and Development
Volume 119 Number 2 June 1993

TECHNICAL PAPERS

Fuzzy-Set Approach for Optimizing Sludge Application Land Selection.
Eric L. Crump, Timothy L. Jacobs, and P. Aarne Vesilind 53

Incorporating Dam Break Concerns in School Site Selection.
James D. Schall and Bruce Lowrey 72

Techniques for Coordinating and Managing Growth.
Philip O. Carter 84

CONSUMER REPORTS

IN THIS ISSUE

July 1993 Volume 58, No. 7

415 **Hot dogs**
Can they fit in a healthful cookout? We tested 45 franks to find out.

420 **Walking shoes**
Dozens of panelists logged thousands of miles to test 32 shoes.

427 **Pressure cookers**
Cooking food fast the old-fashioned way

LIFE INSURANCE

431 **How much coverage do you need?**
Probably more than you think. Our worksheet will help you find out.

435 **Finding the best term insurance**
A practical solution for most families' needs. Ratings of 189 policies.

451 **Insect repellents**
Which products work best on mosquitoes, flies, and ticks.

455 **Household insect control**
Safer ways to rid your house of everything from ants to wasps.

459 **The prostate puzzle**
Can a new blood test and a new drug help men with prostate disease?

468 **Road test: Luxury coupes**
Lexus SC400, Lincoln Mark VIII, and Cadillac Eldorado

476 **Clothes dryers**
Updated tests of top-of-the-line models.

DEPARTMENTS

MEMO TO MEMBERS 411
LETTERS 412
ONCE OVER 413
A QUESTION OF HEALTH 466
A QUESTION OF MONEY 475
MOVIES 480
BRANDS: WHERE TO CALL 480
RECALLS 481
INDEX AND FAX NUMBERS 482
SELLING IT 483

65 Bellmann

GIS WORLD
SPECIAL ISSUE/JUNE 1993 The World's Leading Geographic Information Systems Publication
URISA SPECIAL ISSUE

GIS WORLD

VOL. 6 NO. 7 *The World's Leading Geographic Information Systems Publication* JULY 1993

TABLE OF CONTENTS

10 **Welcome ...**
- 10 **People, Data and Technology Spark GIS Success** *By Ed Crane*
- 10 **Make the Most of GIS** *By H. Dennison Parker*

23 **URISA '93 "Winning with People, Data and Technology"**

30 **Mapping Efforts Bring Hope to Inner-City Residents** *By David S. Sawicki*

34 **Automation to Play Critical Role in 1996 Olympic Games** *By Connie Blackmon, Joel Stone and Morris Dillard*

40 **Decision Support Systems Offer Organizational Efficiency for Transportation Planning** *By Neal Denno and Richard K. Brail*

46 **Local Governments Tap Affordable Multimedia Applications** *By Charles P. Kindleberger and Tony Meyers*

52 **How Good is GIS in Local Government?** *By Richard W. Rourk*

58 **Digital Orthophotography Bolsters GIS Base for Wetlands Project** *By Bryan J. Logan*

FEATURES

36 **Dallas Transit Authority Reduces Costs, Enhances Public Services** *By Ginger M. Juhl*

40 **Statewide GIS Coordination at Work ... Seriously** *By Laura Lang*

42 **Land Remote Sensing Policy Act — Analysis Reveals Deficiencies, Implications** *By Molly K. Macauley*

48 **Use a GIS "Melting Pot" to Assess Land Use Suitability** *By David L. Whitley, Wei-Ning Xiang and J. Jeffrey Young*

52 **The Caatinga Challenge Large-Scale Mapping** *By Paulo Franco*

56 **How to Measure GIS Productivity** *By R.C. Rogers*

DEPARTMENTS

13 **NewsLink**

12 National Biological Survey Anticipated
12 AAG Draws 3,000 Attendees
12 President's USGS Budget Requested
12 ESRI Wins USGS GIS II Contract
12 GPS/GIS '93 Around the Corner
12 EOSAT Releases Data Distribution
13 Smallworld Systems Opens U.S. Office
13 PAMAP, GDE and Sun Join Forces
13 GeoVision Announces Relationship With IBM
13 BLM Awards ALMRS Project
13 GDI and ESL Sign Agreement
13 AM/FM XVI Tops '92 Numbers
14 Cartotech and ASI Form Partnership
14 Pinpoint Positioning Satellite Launched in Los Angeles
14 Geodyssey Winners Announced
14 GPS Constellation Completed
14 Extent of La Coruna Oil Spill Shown
14 Aid to Education Program Extended

GIS NewsLink

9 CSC Team Wins BLM ALMRS Contract
9 NASA Awards EOSDIS Core System Contract
9 Strategic Mapping Acquires DMIS
10 GEONET-II Awarded
10 Denver Implements IVHS
10 UNIX Unification Planned
10 Biodiversity Management System Underway
10 Motor Sports Event Samples Satellite Tracking
11 *GIS STRATEGIES*: What's Ahead?
11 New Interest Shown in Raisz Landform Maps
11 Multimedia Public Information System Introduced
11 Emergency Mapping Response Service Implemented
11 Geonex Awarded Contracts for Diamond Exploration

GIS Conference Connection

12 National Geo-Data Policy Forum Addresses Cost Recovery
12 Federal Geographic Technology Conference Announced
12 IVHS AMERICA Boasts Record Attendance
13 AEC EXPO Cancelled, Lawsuits Filed
13 EGIS '93 to Combine with MARI in '94
13 Geotechnica Fair Focuses on GIS, Science
13 Awards Given at North Carolina GIS Conference
13 AWRA's Spring Symposium Proceedings Available
14 Canadian GIS Conference Held
14 Pecora 12 Symposium Scheduled
14 MAPPS Hosts Federal Conference
14 GIS/LIS '93 Slated for Minneapolis
14 GIS-T '93 Workshops Prosper

INDUSTRIAL ENGINEERING

July, 1993 THE MAGAZINE FOR SYSTEMS INTEGRATORS Volume 25, No.7

FEATURES

20 ERGONOMICS: A HIGH PRIORITY AT LOCKHEED FORT WORTH FACILITY
The application of ergonomic principles is receiving increasing attention throughout this Texas manufacturing facility. *By Rod E. Pepinsky, Robert L. Getz and W. Leon Abbott*

23 QUICK-FIX SOLUTIONS TO ERGONOMICS RELATED HAZARDS — WATCH OUT!
Vendors claim absolute success in reducing hazards, but experts and practitioners wisely remain skeptical. *By Daniel B. Mahony*

27 ERGONOMICALLY DESIGNED TOOLS: SELECTING THE RIGHT TOOL FOR THE JOB
Selecting properly designed tools and making sure they are used correctly can help reduce the incidence and severity of carpal tunnel syndrome and tendonitis. *By Roberta Carson*

30 FINDING WAYS TO ELIMINATE TRANSACTIONS ON THE FACTORY FLOOR
Companies vary as to how extensively they wallow in this paperwork quagmire. *By Mike Hunter*

35 INTEGRATING QUALITY INTO SAFETY AND HEALTH MANAGEMENT
Few managers really understand what Total Quality Management is or how to implement it in a comprehensive total management environment. *By Jim Roughton*

41 IS YOUR COMPANY CONSOLIDATING? IT PAYS TO PLAN
The secret to a successful consolidation effort is planning, and that planning should cover these five basic steps. *By Ronald E. Wurr*

43 AN OVERVIEW OF COMPUTER SIMULATION IN MANUFACTURING
The impressive accuracy obtained by computer simulation is a force to be reckoned with in the coming years. *By Ben C. Nuese and Del R. Nelson*

48 SIMULATION SOFTWARE BUYERS' GUIDE
Here's a helpful listing of 45 different simulation software packages offered by 20 different vendors.

58 USING WORK DESIGN TECHNIQUES AND METHOD ENGINEERING TO ENHANCE PRODUCTIVITY
An aluminum factory in Saudi Arabia specializes in the design and production of prefabricated houses. *By Yasser A. Al-Dosharn and Sved Abed Ali Naqvi*

61 TEACHING MP&C ON CAMPUS USING AN "INDUSTRIAL GRADE" SYSTEM
A "hands-on" approach to manufacturing system education is needed to help bring the critical issues to life. *By Henry W. Kraebber Jr.*

GOVERNING

JULY 1993 / VOLUME 6 NUMBER 10

TRENDS

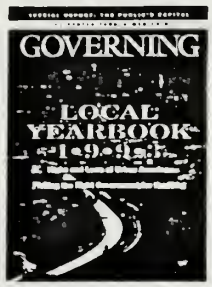
27
First Aid For Medicaid
By Penelope Lemov
Without waiting for Washington to act, the states are setting a frenetic pace of Medicaid reform. The reason: State budgets are sick, and health care is what's ailing them.

30
The Tribes Spin the Wheel
By Kathleen Sylvester
Over a decade, Indian gambling has evolved from bingo parlors to high-stakes casinos. Now, it is pitting the tribes against their state and local governments.



30

32
Hey, Taxpayer, Spare a Dime?
By Charles Mahtesian
Some of America's smaller places are coming up with novel ways to pay for government, and it isn't through million-dollar bond issues. It is public finance by nickels and dimes.



LOCAL GOVERNMENT, 1993

36
The Lure of The Strong Mayor
By Rob Gurwitt
For decades, cities have turned to professional managers as a way to get the politics out of local government. Now, some cities are wondering if it is time to put a little politics back in.

42
THE LOCAL YEARBOOK: TOP AND BOTTOM
Taking the measure of America's localities.
43 The 100 Biggest Cities
50 The 50 Biggest Counties

52
Beyond Whiz-Kid Management
By Jonathan Walters
Cities are learning that the national search for the All-Star administrator can be a high-profile and expensive road to nowhere. Promotion from within is starting to make a comeback.

GOVERNING SPECIAL REPORT

THE PUBLIC'S CAPITAL
58 The question for a roundtable of experts: Whatever happened to the infrastructure crisis?

DEPARTMENTS

4
Publisher's Desk

9
Assessments
Alan Ehrenhalt on plant closings and the local loot bag.

14
Dialogue
Letters from readers, and a commentary by John J. Gilderbloom.

19
Connections

20
Network



20

84
Management

86
Finance

88
Environment

92
Clinton and the Country
George Bush wanted to cut the National Guard back. The new commander-in-chief wants to rejuvenate it—and hand it a new set of challenges.

Journal of Transportation Engineering

Volume 119 Number 4 July/August 1993

SPECIAL SECTION: ADVANCED TRAFFIC MANAGEMENT SYSTEMS

Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls.
Gary A. Davis 489

Optimal Control of Freeway Corridors.
Yorgos J. Stephanedes and Kai-Kuo Chang 504

Real-Time Traffic Diversion Model: Conceptual Approach.
A. G. Hobeika, R. Sivanandan, R. Subramaniam, K. Ozbay, and Y. Zhang 515

Analytical Framework for Minimizing Freeway-Incident Response Time.
Kostas G. Zografos, Teti Nathanail, and Panos Michalopoulos 535

Automating Urban Freeways: Financial Analysis for User Groups.
Robert A. Johnston and Dorriah L. Page 550

TECHNICAL PAPERS

Optimal Dimensions of Bus Service Zones.
Shyue Koong Chang and Paul M. Schonfeld 567

Visibility Near Intersection Partially Obscured by Vegetation.
William O. Rasmussen 586

Vehicle Impact Simulation.
Jerzy W. Wekezer, Morton S. Oskard, Roger W. Logan, and Edward Zywicz 598

Analysis of Concave Curling in Concrete Slabs.
Tianxi Tang, Dan G. Zollinger, and Sanjaya Senadheera 618

Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate Mixtures.
James M. Matthews and Carl L. Monismith 634

Airline Safety Posture: Evidence from Service-Difficulty Reports.
Adib Kanafani, Theodore Keeler, and Shashi K. Sathisan 655

MicroStation®

MANAGER

VOLUME 3, NUMBER 6 JUNE 1993

DEPARTMENTS

MicroScope 6
Dialog Box 12
On the Fly 14
News 16
Calendar 20
New Products 22
Dateline Intergraph 68
User Group Loop 70
The Resource File 73
Ad Index 74
The MarketPlace 75

ON THE LEVEL

Nuts and Bolts 28
QuickTime movies with MicroStation
Frank Conforti

Power Tools 30
UCMs are still alive
Radek Sima

Expert Systems 34
Configuring your MicroStation interface
Bill Steinbock

FEATURES

Meadlock: the man behind the giant 46
Susan Smith

GOVERNING

JUNE 1993 / VOLUME 6 NUMBER 9

TRENDS

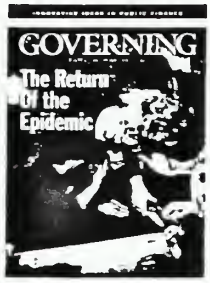
20
Kilowatts And Megabucks
By Tom Arrandale
Pressure from corporations may soon bring an end to the monopoly local power companies have always enjoyed in the communities they serve. That may not be such a great deal for the environment.

22
Networking Mom & Pop, Inc.
By Deborah Borfitz
Some states are working to link small businesses into networks that will help them compete like the best of big companies.



24

24
Junk Food 101
By Charles Mahtesian
Fast-food companies are showing school districts that they can provide a cafeteria menu kids will be more willing to eat. Will they still eat their vegetables?



ON THE COVER: Blood testing by the Alameda County, California, health department is the subject of Drake Sorey's photograph.

FEATURES

26
Epidemics of the '90s
By Brenda L. Wilson
Over the past century, America's public health system has done its job spectacularly well. Now, as a new array of epidemics threatens, that system may be a victim of its own success.

32
Where the Jobs Are
By Penelope Lemov
In the suburbs, jobs are going begging. In the city, people need work. Getting inner-city people to where the employers are is a challenge some places are working hard to meet.

36
School Choice And Reality
By Kathleen Sylvester
Suddenly, the decade-long effort to reform America's schools seems to be hanging on a single word: choice. But as choice becomes the answer, it raises a new series of questions.

GOVERNING GUIDE

Innovative Public Finance
It's not an oxymoron. Necessity is producing inventive new ways to finance public business.
Page **45.**

NEW

IVHS AMERICA

The Official Publication of the Intelligent Vehicle-Highway Society of America

Volume III Number 7 • July 1993

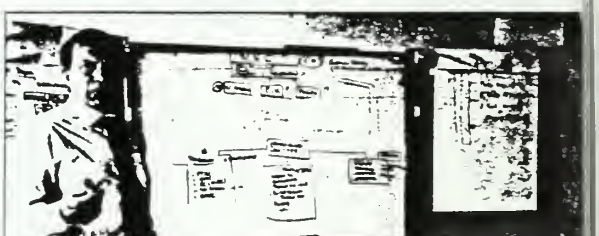
IVHS AMERICA Launches Chapters Program.....Page 4

First IVHS World Congress Set for Paris in Nov. 1994

IVHS AMERICA and IVHS interests in Europe, North America, and the Pacific Rim have announced the First TTA/IVHS World Congress, to be held in Paris' Palais des Congres, Nov. 30 through Dec. 2, 1994.

They chose as the meeting's theme, "Towards an Intelligent Transport System" or "*La route intelligente.*"

The organizers expect the event to draw thousands of participants from nations that are developing intelligent vehicle-highway systems, especially the United States, Great Britain and other countries of the European Community, Japan, Canada, and Australia. TTA stands for Transport Telematics Applications, a European designation chosen to emphasize applications aspects of IVHS.



Nicolas Gorodiche, ERTICO Board Member and chair of first TTA/IVHS World Congress, briefs IVHS AMERICA European delegation on structure of meeting.

THREE YEAR CYCLE

Planners anticipate a Second Annual IVHS World Congress in Japan in 1995, and a third in the United States in 1996. The cycle will begin again in Europe for the 1997 World Congress.

IVHS AMERICA last year proposed a series of IVHS World Congresses to international interests, in part to remedy fragmentation resulting from a growing number of duplicative IVHS meetings around the world.

Participants -- including ASCE, APWA, IBTTA, IEEE, and SAE -- in a preliminary planning meeting during IVHS AMERICA's Third Annual Meeting in Washington in April agreed on the need for a series of World Congresses. They chose Europe as the site of the 1994 meeting to coincide with an anticipated report from the DRIVE II Project, a major IVHS initiative of the European Commission.

IVHS AMERICA Board Member Russ Shields, International Liaison Committee Chair Randy Dot, Executive Director Jim Costantino, and Industry Associate Matt Stearns met in Brussels in June with officials of ERTICO, the organization responsible for coordinating IVHS implementation in Europe, to develop plans for the first World Congress.

ERTICO received bids from Holland, Germany, and France to play host to the international meeting. ERTICO officials chose France for the meeting in consideration of the high level of French government and industry support and the completeness of the French proposal.

Participants in the June discussion in Europe, in addition to the American delegation, included Michel Carpentier, general director of the European Commission's industrial research and development group; Robert John Coleman, general director of the commission's transport group; Pierre LaConte, secretary general of the International Union of Public Transport and a member of the ERTICO Board; ERTICO Chair Olivier Mosse; ERTICO Board Members Nicolas Gorodiche and Eric Sampson; and ERTICO Managing Director Federico Filippi.

WORLD CONGRESS BOARD

Organizers of the IVHS World Congress plan to assemble an IVHS World Congress Board of Directors that represents North America, Europe, and the Pacific Rim, and to hold the Board's first meeting in Paris in August.

Participants in the June meeting in Brussels appointed Nicolas Gorodiche chair of the IVHS World Congress and Russ Shields chair of the Program Committee.

Industrial Engineering®

The Magazine for Systems Integrators

Volume 25, No. 6 June 1993

FEATURES

CONVERSION: AN INDUSTRIAL ENGINEERING CHALLENGE 26
The latest move to convert military manufacturing processes to alternative uses provides great opportunities for industrial engineers.
By Rod Elias Pipinich

IMPLEMENTING AN INTEGRATED SYSTEM TO MANAGE DESIGN AND MANUFACTURING 28
A small manufacturer worked to build its own version of integration.
By Michael Rudy

INVESTMENT IN NEW PRODUCTION CAPACITY UNDER UNCERTAIN MARKET CONDITIONS 31
The use of system dynamics for strategic analysis is growing.
By Jose Perez Rios

ADVANCED TECHNOLOGY AND ITS IMPACT ON FACILITY PLANNING 35
Accurate space planning rests on anticipating key factors and developments.
By S. A. Biniewicz and W.F. Talley

IE INCOME UPDATE: NEW SALARY SURVEY RESULTS 37
Who are the highest paid IEs. The 1993 salary survey has the answers.

PROJECT MANAGEMENT: A REQUISITE FOR SUCCESS 42
Project management is now an important process evaluation/streamlining tool.
By Tom Rogers

ENTERPRISE-WIDE PROJECT MANAGEMENT 44
Enterprise-wide solutions facilitate integration efforts among people and projects.
By David McFarlane

EMPLOYEES DRAW ROAD MAP FOR CULTURAL CHANGE 49
Here's a company with a strong testimony for the benefits of self-empowerment.
By John F. Wilfore

SOFTWARE TOOLS FOR SUPPORTING PLANNING 51
Several software tools can help companies create effective and efficient plans.
By William B. Rouse and Charles W. Howerd

PROCESS FLOW MODELING AND ANALYSIS 54
Process flow modeling ensures successful design and implementation.
By Hee Man Bae

AN EXPERT SYSTEM APPROACH TO ADMINISTER ACCEPTANCE CONTROL 57
One company set out to resolve problems associated with improving quality.
By Seongin Kim, Chun Sup Lee, Jae Ryul Yang and Han Chul Wang

BEYOND QUALITY YOU CAN SEE AND FEEL 61
Several distinct types of quality exist — do you know what they are?

1993-94 IIE BOARD OF TRUSTEES 63

Institute of Transportation Engineers

Contents

ITE JOURNAL

Volume 63, Number 6
June 1993

Articles

13 **1992-93 Technical Council**
By Eugene M. Wilson
The Institute's Technical Council is expanding its vision and implementing a dynamic plan to better guide its activities and get more professionals involved.

17 **The Netherlands: Gateway to the World's Largest Market**
By Rik de Groot
The Netherlands, sight of ITE's 63rd Annual Meeting, is for many reasons the perfect choice as a central distribution center for the European community's 350 million consumers.

21 **A Survey of Transportation Service Level Standards**
By Joseph P. Savage Jr., Edward R. Stollof and Christine W. Wolf
A survey of five states and 23 local jurisdictions helped to determine what transportation service level standards currently are in use and what trends are likely in the future.

26 **Yellow and Red Clearance Signal Timing: Drivers and Attorneys Speak Out**
By Peter S. Parsonson, William S. Czech and Walter C. Bansley III
Based on research results and a case study, the authors conclude that it would be unrealistic for traffic engineers to design signal timing on the assumption that drivers will meet their legal duty to yield to clearing vehicles.

34 **Transportation Utility Fees**
By Reid Ewing
Using nationwide experiences, Port Orange, Florida, developed a transportation utility fee ordinance and fee structure, which, if upheld, will bode well for other strong "home-rule" states that might wish to tap this new funding source.

41 **Modified Signs, Flashing Beacons and School Zone Speeds**
By Neal R. Hawkins
This article summarizes Des Moines, Iowa's experience with modifications in school zones to enforce speed limits.

MODERN STEEL CONSTRUCTION

July 1993

FEATURES

12 **STRUCTURAL STEEL SHAPE AVAILABILITY**
A listing of available shapes from the major producers of structural steel members and tubes.

26 **A NEW SHAPE FOR HANGAR DESIGN**
A trapezoidal design minimizes both exterior cladding needs and interior heating and cooling requirements

32 **RAISING AN ARCH**
An arched roof was created by applying stress to a flat truss

38 **WINGING IT**
High-bay steel moment frames clear-spanning 200' were required to meet seismic design criteria for an airplane wing fabrication and assembly building

46 **CAD TAKES ON STRUCTURAL ENGINEERING**
Pre-processors are beginning to provide design engineers with the graphical advantages of advanced CAD systems

Institute of Transportation Engineers

Contents

ITE JOURNAL

Volume 63, Number 7
July 1993

Articles

12 **Dynamic Traffic Management in the Netherlands**
By George C. Van Leusden and Michèle J. Coemet
The Dutch road traffic policy aims for a balance between transportation and the environment by achieving greater accessibility for commercial traffic while improving the environment and road safety.

19 **A Proposed Three-Step Process for Traffic Impact Analysis in Indiana**
By Soumya S. Dey and Jon D. Fricker
Using the concept of "warrants," a flexible method of determining the necessary elements in a particular traffic impact analysis has been established.

25 **Choosing Between a Median and a TWLTL for Suburban Arterials**
By Dibyendu Mukherjee, Arun Chatterjee and Richard Margiotta
This article examines the existing state of the art with regard to the choice between a nontraversable median and a TWLTL.

32 **ITE's 63rd Annual Meeting—Join Us in The Hague**
An Overview of the Annual Meeting, including meeting highlights, tour information and registration form.

36 **Pedestrian Accidents: A 15-Year Survey from the United States and Western Europe**
By Elias M. Choueiri, Ruediger Lamm, Georges M. Choueiri and Bernard M. Choueiri
The number of pedestrian fatalities around the world is alarming and deserves the attention of both elected officials and citizens. This study provides extensive statistics on pedestrian-vehicle accidents in the United States and 11 Western European countries.

44 **Earning Credibility in the Transportation Profession**
By ITE Technical Council Committee 2-44
Through anecdotes and guidelines, this report gives people in the transportation profession a base from which to work toward achieving credibility in the industry.

MODERN STEEL CONSTRUCTION

June 1993

FEATURES

14 CREATIVITY THROUGH APPLIED SCIENCE
Lev Zetlin's progressive philosophy of structure design stressed innovation firmly rooted in cost-effective technology (First in a series of profiles of prominent structural engineers)

22 VERTICAL EXPANSION ADAPTS TO CHANGING NEEDS
A two-story addition allowed a growing hospital to add needed outpatient space

28 WORKING AROUND FLOOR-TO-FLOOR HEIGHT RESTRICTIONS
Designing an interstitital floor proved crucial for matching the existing floor heights

32 SOLVING THE HEIGHT RESTRICTION PROBLEM
A New Jersey hospital has exploded the myth that only concrete construction can deal with limits on floor-to-floor heights

36 REDUCING FIRE PROTECTION REQUIREMENTS
Researchers attempted to burn down a building mock-up to test Australian fire protection requirements

mlr

Monthly Labor Review

May 1993
Volume 116, Number 5

Deborah P. Klein, *Editor-in-Chief*
Robert W. Fisher, *Executive Editor*

Articles

3 **Spending by older consumers: 1980 and 1990 compared**
In 1990, older Americans, especially those aged 65 to 74 had higher preretirement and pension earnings, compared with their 1980 counterparts
Pamela B. Hitschler

14 **Cost of employee compensation in public and private sectors**
Much of the variation in costs in the two sectors is due to differences in occupational mix and types of compensation packages provided
Bradley R. Braden and Stephanie L. Hyland

22 **Collective bargaining agreements provided moderate changes in 199**
Despite a pickup in the economy, concern about job security remained, perhaps, contributing to restraint by parties at the bargaining table
Fehmida R. Sleemi and Phyllis I. Brown

34 **Multifactor productivity in utility services industries**
The slowdown in growth after 1983 reflects the impact of energy prices on these industries which are heavily dependent on fossil fuel inputs
John L. Glaser

Reports

50 Producer prices in 1992 held down by productivity gains
Craig Howell, William Thomas, Harry Briggs, Scott Sager

53 Consumer price rise slows further in 1992
Richard C. Bahr

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES

June 1993
Vol. 32, No. 6

20 **Welcome to NPA '93 and New Orleans**
Some hints to get the most out of the convention and the city. Enjoy yourselves!



23 **Product Spotlight**
NPA '93's new exhibitors provide a sneak preview of the new equipment, services and technology being showcased at the Exposition

29 **INDUSTRY FORUM — A Special Interview with Chairman Bernard Meyer**
Rich Parker
Being NPA chairman has its ups and downs



33 **Kalamazoo is Proof: Privatizing Parking Works**
David M. Feehan
City's "high-service, high-value" operation quiets critics

38 **Privatization in International Markets**
Nicholas Bevilacqua and Suzette Conrardy
There are many opportunities for privatizing parking operations overseas

43 **Cost Effectiveness of Parking Access and Revenue Control Systems**
Mary S. Smith
Does the increased income justify the investment in a sophisticated PARC system?

52 **Money Talks**
Jeffrey B. Mackevich
The first step is setting priorities for your investment objectives

54 **Norene Dann Martin: Small Package, Big Surprise**
Lou Cook
Former NPA executive director shows her mettle

New England Economic Indicators

4 *Data Summary*
6 *Employment*
10 *Unemployment*
11 *Charts: Employment, Unemployment, Confidence*
12 *Labor Market Areas*
14 *Unemployment / Help Wanted / Charts*
15 *Hours and Earnings / Consumer Confidence*
16 *Income / Retail Sales*
17 *Charts: Prices, Housing, Retail, Income*
18 *Prices / New Business*
19 *Electricity Sales*
20 *Construction*
21 *Housing*
22 *State Taxes*
23 *Selected Assets*

Journal of
Structural Engineering
Volume 119 Number 6 June 1993

TECHNICAL PAPERS

Stability of Masonry Piers under Their Own Weight and Eccentric Load.
Lidia La Mendola and Maurizio Papia 1678

Shakedown of Frames with Semirigid Connections.
Francis Tin-Loi and Vanissorn Vimonsatit 1694

Buckling Fire Endurance of Steel Columns.
Wojciech Skowroński 1712

Simplified Strength Prediction for Cold-Formed C- and Z-Shapes.
R. A. LaBoube 1733

Computer-Automated Design of Semirigid Steel Frameworks.
Lei Xu and Donald E. Grierson 1740

Moments in Deck Slabs Due to Cantilever Loads.
Aftab A. Mufti, Baidar Bakht, and Leslie G. Jaeger 1761

Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory.
Satoshi Katsuki, Dan M. Frangopol, and Nobutaka Ishikawa 1778

Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications.
Satoshi Katsuki, Dan M. Frangopol, and Nobutaka Ishikawa 1792

Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings.
Howard H. M. Hwang and Hui-Mi Hsu 1807

Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models.
Rajan Sen, Mohsen Issa, Antoine Gergess, and Xianghong Sun 1825

Markov Model for Seismic Reliability Analysis of Degrading Structures.
Sharif Rahman and Mircea Grigoriu 1844

Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study.
Charles W. Roeder, Stephen P. Schneider, and James E. Carpenter 1866

Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study.
Stephen P. Schneider, Charles W. Roeder, and James E. Carpenter 1885

RC Flat Slab–Column Subassemblages under Lateral Loading.
Daniel N. Farhey, Moshe A. Adin, and David Z. Yankelevsky 1903

Methodology for Impact Factor of Horizontally Curved Box Bridges.
N. H. Galdos, D. R. Schelling, and M. A. Sahin 1917

Full-Scale Implementation of Active Control. II: Installation and Performance.
A. M. Reinhorn, T. T. Soong, M. A. Riley, R. C. Lin, S. Aizawa, and M. Higashino 1935

Estimation Curve for Modal Damping in Stay Cables with Viscous Damper.
Benito M. Pacheco, Yozo Fujino, and Ajai Sulekh 1961

Journal of
Structural Engineering
Volume 119 Number 7 July 1993

TECHNICAL PAPERS

Doubly Symmetric Tube Structures. I: Static Analysis.
Hideo Takabatake, Hisao Mukai, and Tadato Hirano 1981

Doubly Symmetric Tube Structures. II: Dynamic Analysis.
Hideo Takabatake, Hisao Mukai, and Tadato Hirano 2002

Accurate and Efficient Method for Analysis of Reinforced Concrete Structures.
Eiki Yamaguchi and Toshiaki Ohta 2017

Computer-Automated Design of Reinforced Concrete Frameworks.
Hamid Moharrami and Donald E. Grierson 2036

Nonlinear Analysis of RC Shell Structures Using Laminated Element. I.
Shenglin Di and Y. K. Cheung 2059

Nonlinear Analysis of RC Shell Structures Using Laminated Element. II.
Shenglin Di and Y. K. Cheung 2074

Creep in Composite Continuous Beams. I: Theoretical Treatment.
Luigino Dezi and Angelo Marcello Tarantino 2095

Creep in Composite Continuous Beams. II: Parametric Study.
Luigino Dezi and Angelo Marcello Tarantino 2112

Distortional Buckling Curves for Composite Beams.
Fred W. Williams, Adel K. Jemah, and Diem H. Lam 2134

Tests and Ratings of Short-Span Steel Bridges.
J. M. Stallings and C. H. Yoo 2150

Bolted Connection Design Values Based on European Yield Model.
T. L. Wilkinson 2169

Behavior of Arc Spot Weld Connections in Tension.
R. A. LaBoube and W. W. Yu 2187

Three-Dimensional Model for Wood-Pole–Strength Predictions.
Nilson Franco and Patrick J. Pellicane 2199

Marine Component Fatigue Reliability.
James M. Ricles and Pierre Leger 2215

Inelastic Behavior of Hyperbolic Cooling Tower.
Chang Shik Min and Ajaya Kumar Gupta 2235

TECHNICAL NOTES

Long-Term Shortening of Concrete Columns in Tall Buildings.
L. B. Pan, P. C. Liu, and S. L. Bakoss 2258

Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors.
Peter L. Fuhr, Dryver R. Huston, Timothy P. Ambrose, and Darrell M. Snyder 2263

DISCUSSIONS

3-D Nonlinear Seismic Behavior of Cable-Stayed Bridges Ahmed M. Abdel-Ghaffar and Aly S. Nazmy.
By Onsy L. Roufaeil.
Closure by Ahmed M. Abdel-Ghaffar 2272

Simplified Building Analysis with Sequential Dead Loads—CFM. Chang-Koon Choi, Hye-Kyo Chung, Dong-Guen Lee, and E. L. Wilson.
By C. N. Srinivasan and C. R. Arvind.
Closure by authors 2273

PLANNING CONTENTS

American Planning Association Vol. 59, No. 6 June 1993

10 **Change Comes to Salt Lake City.** A building boom is pushing the staid Mormon capital toward new strategies write James G Wright and Chris Jorgensen.

16 **Homework.** Consultant Michael Frank offers a model ordinance to regulate home occupations. In Planning Practice.

20 **A Small Room at the Inn.** Mary Lou Gallagher reports on San Diego's single room occupany hotels Part of our year-long focus on "America's Cities. What Works."

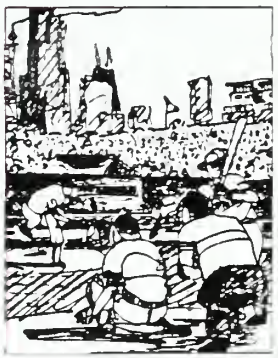
26 **Seven Steps to Better Writing.** Advice from journalist-turned-planner John Leach

10



5 **From the Capitals**
7 **APA News**
Stollman to retire.
28 **Tech**
Streets and surfaces.
29 **News**
Hudson Valley transportation plan census changes.
31 **Letters**
Midwest neotrad, don't forget rural areas
31 **Planners Library**
Advice to developers—and planners.
33 **From the Board**
Call for volunteers.
33 **Members in the News**
35 **Conference Calendar**
35 **Consultant Directory**
42 **In the Works**
South Carolina s Daniel Islanc

28



PLANNING CONTENT

American Planning Association Vol. 59, No. 7 July 19

10 **United We Stand** By funding housing, America s largest charity is keeping up with the times. Robert Guskind reports

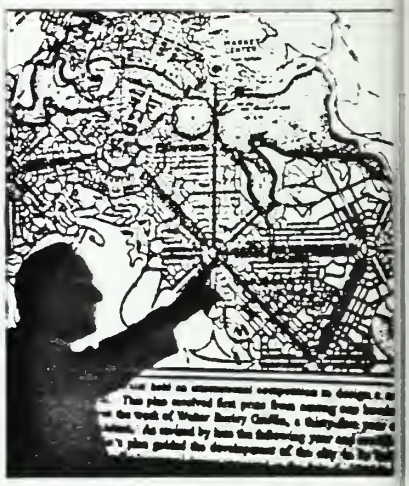
14 **Off-the-Shelf Data for Your GIS** A handy list of sources to build your database—in Planning Practice.

18 **Going Out in Style.** Susan Thoresen offers financial strategies for retirement.

24 **New Hampshire Dispenses Down-Home Advice.** Nancy Levinson reports on the state's pro bono design teams.

28 **Ballpark Figures.** Philip Bess suggests that building old-fashioned ballparks might be the best deal after all.

18



5 **From the Capitals**
7 **APA News**
AICP budget, members in the news.
31 **Tech**
The world of GIS
32 **News**
Avenue of the Arts, Omaha plan.
35 **Letters**
36 **Planners Library**
38 **From the Board**
39 **Commissioners Memo**
Board actions, survey results.
43 **Conference Calendar**
43 **Consultant Directory**
50 **Viewpoint**
Post-conference musings.

PTI JOURNAL

PUBLIC TRANSPORTATION INNOVATION

TABLE OF CONTENTS

May/June 1993
Volume 7, Number 3

Features

2 Transit Agencies and Brokerages
Transit Agencies tighten control over brokerages in effort to provide more cost-effective paratransit service

4 Systems Integration
Mixing and matching of systems in paratransit operations

6 Opportunity in Transportation Finance
Interest Rates for 1993

9 ADA Update
FTA Considers Time Extensions on Key-Station Compliance

11 Global Positioning System
DOD-DOT move to coordinate

12 FTA Appointments
Few appointments named to the DOT by President Clinton

ROADS & BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructur

VOL. 31/NO. 6 JUNE 1993

FEATURES

18 EPA response nixes NAPA request for rubber waiver

26 Cleveland contractor cleans up tearing down
Use of new demolition attachments on excavators frees firm from demolitio subs

30 Diamond saws make quick work of parapets
Deft work by Michigan contractor leads to fast removal of parapets in bridg deck rehab

34 Enhanced salt, CMA use show rise in survey
Fourth snow and ice control techniques survey in eight years shows increasin use of special deicers among state DOTs

38 Epoxy-coated rebar benefits Minnesota deck
Specification change incorporates fusion-bonded epoxy-coated rebar instead of black steel; handling in field critical to performance

42 Controls make loaders more operator friendly
High-tech controls speed loading cycle times for greater loader productivity

46 Recycled PCC/slag find way into roads
Use of reclaimed concrete, steel mill slag is on the rise; research shows alternative aggregates can be economical, structurally sound

50 Snow 'Storm of Century' tests Virginia DOT
Virginia Department of Transportation's Bristol District snowfighters rescue drivers, power crews; Contractors work 'round clock

MAY–JUNE 1993 NUMBER 166

TR NEWS

2 Transportation Policy and the Future
Dialogue with Wilfred Owen

6 SHRP-IDEA Program
Successful Activity To Have Wider Focus at TRB

10 Profile of an Organization
Texas Transportation Institute

14 Organizational Alternatives for a Transit Research Coordinating Council
Results of TRB Study on Transit Research

17 Hazardous Materials Shipment Information for Emergency Response
TRB Report Study Findings

20 Research Pays Off
Full-Scale Arrester Bed Testing Leads to More Cost-Effective Design

22 Profiles

24 News Briefs

27 TRB Highlights
CRP News, 29

31 Calendar

34 Bookshelf
New TRB Publications, 35

Vol. 34 No. 5 May 1993 ISSN 0041-0683

Traffic Engineering + Control

236 Risk on the roads
1. Perceptions of risk and competition
D. Salter T. Carthy, D. Packham and N. Rhodes-Delty

243 Drivers' acceptance of automatic traffic surveillance
R. Muskaug

247 Changes in the amount of car travel following the opening of new superstores
Evidence from a household survey in Swindon
G. Stokes

252 Pedestrian routes in central Edinburgh
C. Hass-Klau, J. Douglas and I. Nold

265 University of Westminster Transport Studies Group: Annual Report 1992
P. Jones

271 Transport courses run by members of the Universities Transport Study Group

256 Parking
259 Industrial News
273 News
279 Letters to the Editor
280 Buyers' Guide
290 Classified Advertisements
292 Coming Events

MARCH/APRIL 1993

MASS TRANSIT

Tools of the trade for the Transit Vehicle. This issue includes information on computer designed seating, maintaining aluminum wheels, alternate fuels, and automatic maintenance.

30 SPECIAL SUPPLEMENT
The 1993 Transit Directory
A comprehensive suppliers' reference guide combines three former directories and provides all manufacturer/distributor information in one volume.

70 ALTERNATE FUELS
Fueling the Future of Mass Transit
by Keith Strandberg
While there has been no federal mandate, authorities are searching for alternatives when it comes to fueling and the environment.

14 MARKETING/PUBLIC RELATIONS
RailWorks: Keeping the Riders Informed
by Tami Goldberg
Extensive marketing keeps rail customers riding despite construction, noise, and debris.

76 INTERNATIONAL VIEW
Trends in France's Public Transportation
by Francois Batisse
Rail leads the way in France's mode of travel, due in large part to the introduction of high speed rail.

20 NORTH AMERICAN PROFILE
AREA's Rail Transit Committee
by Martha Wentworth and David Noble
Proposed engineering standards by the Rail Transit Committee could lead to establishing common specifications for the industry.

78 EXTERIOR/MAINTENANCE
Six Steps to Maintaining Aluminum Wheels
by Catherine Zacchi
A manufacturer's survey revealed that one of the most asked questions is how to maintain new low-maintenance aluminum wheels.

26 MAINTENANCE
Automatic Testing and Data Collection
compiled by Heidi Tolliver
A bus chassis dynamometer system streamlines tests of engines, transmissions, and emissions with minimal operator input.

80 INTERIOR/STATE-OF-THE-ART TECHNOLOGY
Computer Designed Seating
by James Masters
Mechanical computer-aided engineering software helps engineers solve design problems on screen.

Railway Age

June 1993







29 Promoting quality, controlling costs
How P&MM departments spend $4 billion a year has a bearing on the bottom line.

37 Searching for a safer ride
Autostack is a promising newcomer to the $3 billion motor vehicle rail fleet.

42 Takeoff time for CTA's Midway Line
Chicago's newest rapid transit line is a testing ground for innovation.

34A Special pull-out section: 1993 Railroader's Guide to Washington

47 Amtrak's high speed trainsets
The contenders are lining up as the procurement process begins.

53 Special section: 1993 Financial Guide to Equipment Leasing

17 Rail Update
U.S. companies bid for NZ Rail; SP goes public; BN expands TTC; Harriman medals; Conrail double-stacks for Pennsylvania; OMNI for sale.

27 Transit Update
U.S. DOT priority projects; L.A. Blue Line ridership sets a record; APTA plans intermodal workshop; Ansaldo gets contract for Birmingham light rail.

COMMENTARY

1 Publisher's Letter
8 Inside
12 Lines on Labor
14 Watching Washington
90 In Transit

RAILWAY GAZETTE INTERNATIONAL

CONTENTS

COMPLETED DA-QIN LINE REVEALS CHINA'S HEAVY HAUL PROGRESS 381
Zhou Hongye, Vice President, China Academy of Railway Sciences, welcomes delegates to the Fifth International Heavy Haul Railway Conference and outlines CR's progress with heavy haul

HEAVY HAULERS EQUIPPED TO RIDE OUT THE STORM 385
IHHA Chairman Danie J van Zijl looks at the Association's achievements and at the tasks ahead

CP PERFECTS SECOND GENERATION UNIT TRAIN 391
After trials with a prototype Second Generation Unit Train, CP Rail is about to introduce the concept into full revenue service

ROUTE MANAGEMENT AND BETUWE LINE SET TO TRIPLE NS-DB FREIGHT 399
The Dutch government is to decide this year whether to create the 120 km Betuwe route as a high capacity dedicated freight corridor linking Rotterdam's Maasvlakte with the German frontier

EUROKOMBI EXPERIENCE DIMS PRIVATE TRAIN PROSPECTS 401

MODELLING DYNAMIC INTERACTION BETWEEN TRAIN AND TRACK 407
A reliable method of analysing train/track dynamics is being developed which allows the selection of mutually compatible components for both systems to be optimised at the design stage

HEADLINE MEASURES RAIL PROFILES AT SPEED 417
An optical system for measuring worn rail, conicity and wheel contact stress is being developed for installation in standard rail vehicles running at 160 km/h

SUPPLIERS CROWD TO SHOW AT WEMBLEY 428

HIGH SPEED PLANS COME DOWN TO EARTH 433
The US government is ready to support realistic proposals to upgrade inter-city routes for 200 km/h using diesel traction

PRODUCT NEWS 437
DIARY 440
PUBLICATIONS 440

HEADLINES

Beijing – Shanghai high speed line plan

A 1 330 km high-speed line is to be built between Beijing and Shanghai by the end of the century China's Ministry of Railways announced on April 23 that central government funding is being allocated for the 40bn yuan project, although contributions will be sought from local authorities and foreign investors. The work will be timetabled into the next phase of Chinese Railways' investment programme (p359).

Running via Tianjin and Nanjing, the new line will serve the provinces of Hebei, Shandong and Jiangsu, which are amongst the most developed in China. The region holds 27% of the population and accounts for 36% of the gross national product. Traffic in the Beijing – Shanghai corridor is expected to reach 100 million tonnes and 60 million passengers a year by 2000. Work started in 1989 on a duplicate freight corridor to relieve CR's existing main line, and the Hangzhou – Xuancheng section of this route was completed in 1991.

The new line will be designed for 250 km/h, bringing the journey time between the capital and principal port down from 17 h to around 6 h 30 min.

★ Jiangsu Province Local Railways Administrative Office is planning to establish foreign investment joint ventures to help fund the 571 km Xinyi – Changxing line and the Nantong – Qidong local railway. □



The first of 46 AMD-103 Bo-Bo diesel-electrics being built for Amtrak by General Electric is to start test running at Pueblo shortly. As well as the 4 000 hp Bo-Bos, GE is to build 10 similar units rated at 3 200 hp with third rail equipment for access to New York's Penn station

CONTENTS

JANE'S Airport REVIEW

Incorporating Aviation Ground Equipment Market

ISSN: 0954 76 49 JUNE 1993

News

2 Paris Air Show exhibits focus on satellites; Noise fines for Gatwick; Another domestic airline in India, Beijing endorses Macau airport
3 Competition hots up among UK regionals
4 Industry calls for greater de-icing standardisation.

Business

7 A round-up of contracts and business developments

Airports

11 Although airport development is progressing in Eastern and Central Europe the rate of progress reflects that of each state's economy, with the pace slowing the further east you go.

Focus on security

17 A review of potential areas of terrorist activity and what new steps are being taken to counter the problem.
18 A new security agreement may look good on the surface but many states are voicing doubts about its implementation.

ATC

24 Efforts are being made to close the gap between ATC systems in East and Central Europe and those in the West.

Equipment

27 Keeping the balance between cost, the environment and future demand is taxing the ingenuity of tow tractor designers.
33 A Buyer's Guide to Flight Information Display Systems.
38 A round-up of new products

WATER Engineering & Management

Vol. 140, No. 6

FEATURES

June 1993

Pressurized Pipeline for San Diego Sludge

This pipeline project, part of a very large, long-range program in San Diego, had some demanding design and installation requirements **21**

Changing Control Strategy Solves Chlorine Residual Problems

Tight chlorine residual limits forced a Buffalo, New York, wastewater plant to install monitoring and control instrumentation based on oxidation reduction potential **23**

Pathogen/Vector Attraction Reduction Requirements of the Sludge Rules

First of four articles on the so-called sludge rules, this describes the pathogen reduction requirements and actions that can be taken **25**

Readers Surveyed for Salary, Industry Trends

WEM's third annual survey of readers looks not only at compensation trends, but also at how readers see the industry now and in the future **27**

CONTENTS

JUNE 1993
VOL. 30, NO. 6

TRAINING

THE HUMAN SIDE OF BUSINESS

FEATURES

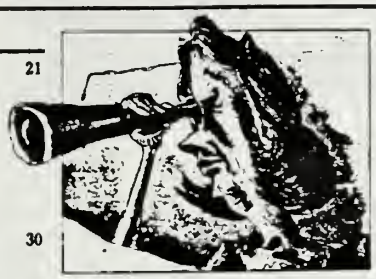
THE SEARCH FOR SPIRIT IN THE WORKPLACE 21
By Chris Lee and Ron Zemke
Has all the recent talk about visions, values and purpose struck a deeper chord in corporate America? A growing chorus says yes.

FRICK TEACHES FRACK 30
By Bob Filipczak
True, 'peer training' can be a fancy name for haphazard on-the-job training, with all the classic drawbacks. But with a bit of structure and support, employees really can train one another quite effectively.

WHY NOT 'INPLACEMENT'? 37
By Jay Stuller
Outplacement may be the path of least resistance in a downsizing. But redeploying workers through 'inplacement' is a more productive road to travel.

TRAINING AS BAIT 45
By Paul Froiland
When state governments go fishing for new industries to create new jobs, guess what they're dangling on the hooks?

TEAMWORK: THE HEART OF AN AIRLINE 53
By Connie Bonner
At Southwest Airlines, CRM training extends teamwork and communication from the cockpit to the baggage carousel.



Page 37



Page 45



Page 59

A TRAINER'S GUIDE TO VIDEOCONFERENCING 59
By Michael Emery and Margaret Schubert
Here's how to make the most of a promising solution to your distance learning needs.

DEPARTMENTS

EDITORS' NOTEBOOK 8
The Rest of the Story

TRAINING TODAY 12
The quality gap, flash your harasser, rating secretaries and more.

CALENDAR 16

LETTERS 17

BOOKS & FILMS 79

TECH TRENDS 82
Video Premix

NEW PRODUCTS & SERVICES 83

FREE INFORMATION 86

SEMINARS & WORKSHOPS 90

CLASSIFIEDS 94

VIEWPOINT 96
The Clutter Queen Loses Her Crown
By B. J. Hateley

Cover illustration by Corbert Gauthier

PRINTED WITH SOY INK

CONTENTS

June 1993 Vol 25 No 6

Comment: Institutionalised corruption 5

World News 9, 10, 11, 13, 15, 16

Protecting Stockholm's archipelago 19
Peter Darling, The Editor

Microwave assisted drilling in hard rock 24
D P Lindroth, W R Berglund, R J Morrell and J R Blair, Twin Cities Research Center, US Bureau of Mines, Minneapolis

Overcoming a collapse in the Karawanken Tunnel 30
Professor Dr Ing Bernhard Maidl, Head of Civil Engineering (Tunnelling), Ruhr University, and Dr Ing Dieter Handke, Consultant, INNO-TEC, Bochum, Germany

Letters to the Editor 33

BRITISH TUNNELLING SOCIETY 35
Alleviating flooding and river pollution in Bradford
P Williams, Group Engineer, City of Bradford Metropolitan Council, and R K Lorenzo, Johnston Construction

LEGAL FORUM 39
Improving contractual practices for underground work
Joseph Huse, Freshfields, London and Paris

ITA REVIEW 41
'Options for Tunnelling' assessed
Peter Darling, The Editor

TRUCKS FOR TUNNELLING 45
Manoeuvrability is the name of the game
David Lawton, Technical Journalist

TUNNELS AND TUNNELING

WWS WORLD PORTS

JUNE 1993 Vol. 58, No. 4

Contents

FEATURES

Business Outlook — 12
Special to WWS/World Wide Shipping

Europe — 20
By MICHAEL D. TEBAY, *Vice President, Transportation Group, Mercer Management*

Grand Bahamas — 64
Special to WWS/World Wide Shipping

Intermodalism — 26
By DAVID J. POPE, *Director, International Marketing, CSX Intermodal*

Liner Shipping — 32
By MICHAEL D. TEBAY, *Vice President, Transportation Group, Mercer Management*

U.S. Customs — 14
By DAVID SERKO, *Senior Partner, Serko & Simon, NY, Contributing Editor, WWS/World Wide Shipping*

WWS/STAFF REPORTS

AAPA — 50
By MARC FELICE, *WWS, Features*

Advertisers Index — 28

Chartering — 38
By SUZANNE CAUTHEN, *WWS, Senior Editor*

Commentary — 2
By MARC FELICE, *WWS, Features*

Equipment — 62
By MARTIN C. PILSCH, JR., *WWS, Equipment*

ICHCA — 43
By MARC FELICE, *WWS, Features*

Intermodalism — 29
By GEORGE ADCOCK, *WWS, Special Features*

North Atlantic Ports — 53
By GEORGE ADCOCK, *WWS, Special Features*

Project Cargoes — 40
By CARLO J. SALZANO, *WWS, Washington, DC*

TWRA — 36
By SUZANNE CAUTHEN, *WWS, Senior Editor*

Trends — 15
By MARC FELICE, *WWS, Features*

Washington Report — 8
By CARLO J. SALZANO, *WWS, Washington, DC*

The American Management Association Magazine

JULY 1993

Management Review



COVER STORY:
10 HEALTHCARE

DRUG PRICES: WHAT'S THE RATIONALE?

As drug prices keep escalating, it's the consumer who appears to be losing. How are pharmaceutical prices established anyhow?

FEATURES

16 LEADERSHIP
MEMO TO IBM: ADVICE TO LOU GERSTNER CEOs, management consultants and academics offer their suggestions, via e-mail, to IBM's new chief. Here's what they believe will turn around IBM.

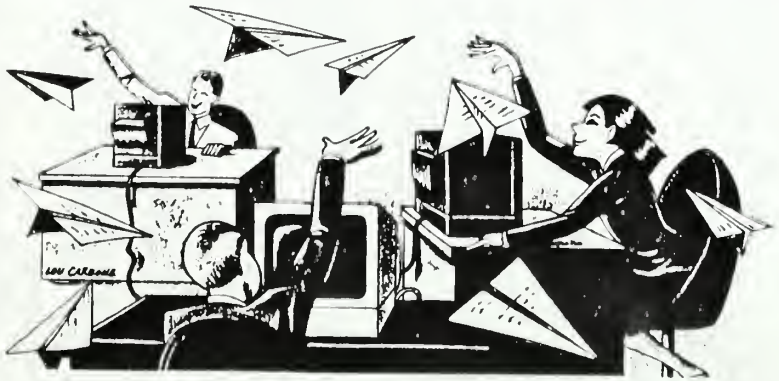
23 CASE STUDY
FEDEX'S KEY TO SUCCESS For Federal Express, corporate communications, especially the award-winning Survey-Feedback-Action program, has remained a key focus of its human resources department and is a major factor in the company's success today.

37 COMMUNICATIONS
BARRIERS TO A HIGH-PERFORMANCE BUSINESS Every company has unwritten rules that govern employees' behavior and which can be harriers or catalysts to becoming a successful business.

42 AMA REPORT
CORPORATIONS PREPARE FOR CHANGE AMA's advisory councils agree that corporate America needs to gear itself up for fundamental change. This is the key tu thrive in an alien and unforgiving business environment.

48 TECHNOLOGY
THE E-MAIL QUANDARY Electronic mail was supposed to eliminate the paper clutter and enhance efficiency. Now that it's ubiquitous in corporate America, is it helping—or hindering?

52 AMA REPORT
THE CHALLENGE OF TOMORROW'S WORKFORCE More than 1,000 human resources professionals gathered last spring in Boston to participate in AMA's Annual HR Conference and Expo. The rallying cries were leadership, education and healthcare.





DEPARTMENTS

1 EDITOR'S NOTE
"Nannygate" has called attention to the childcare options and obstacles facing all working parents.

4 MEMO FOR MEMBERS
AMA is changing its logo to better reflect the changing business world.

5 FRONT LINES
New directory of executive compensation consultants....The glass ceiling remains firmly in place....New technology helps you makes heads or tails of demographics....Excuses employees use for being late to work....Retiring dean of Darden Graduate School of Business sees education as "management development."

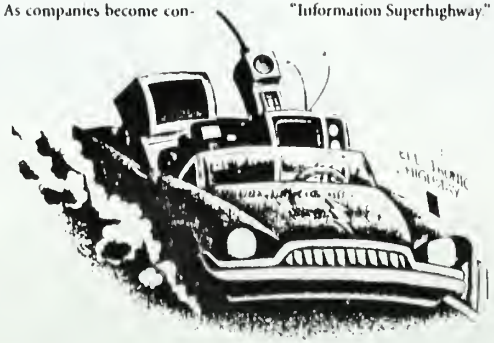
25 IN PRACTICE
As companies become convinced that work-family benefits make good business sense, childcare advocates hope they will join the fight for quality childcare.

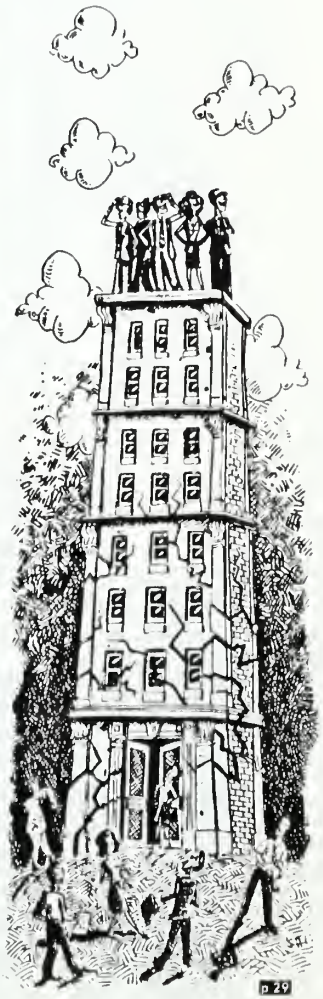
29 CUTTING EDGE
Every manager wishes for business success. But beware its potentially dangerous byproducts—complacency, arrogance and smugness.

33 FACE TO FACE
In one of the last interviews Macy's co-chairmen Myron Ullman and Mark Handler gave in tandem, they offer their recipe for a miracle on 34th Street.

56 MEMBER'S UPDATE
What's new at AMA.

61 DC PERSPECTIVE
Governmental roadblocks keep popping up as we speed toward the new "Information Superhighway."





64 LIGHTER SIDE
Decision making can be a wonderful or traumatic experience. Some people thrive on it, while others fall apart.

CONTENTS

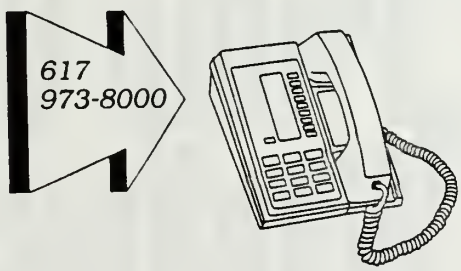
May 1993 Vol 25 No 5

TUNNELS AND TUNNELING

Comment: Success from the jaws of disaster	5
World News	7, 8, 9, 11, 13, 14
Compressed air conquers running sands *Peter Darling, The Editor*	17
Mucking systems for pipe jacking and microtunnelling *Arthur F Moss, Chairman, Decon Engineering, UK*	23
CHANNEL TUNNEL RAIL LINK **Cost factor limits tunnel options** *John Hellings, Assistant Editor*	29
Kuji oil storage cavern *Jun Muta, Kajima Corporation, Tokyo, Japan*	33
Catalytic converters for underground use *Stevie Edwards, Technical Journalist*	39
Letters to the Editor	43
Drifter	43
BRITISH TUNNELLING SOCIETY **Design and construction for durability in tunnels** *J G Campbell, Charles Haswell & Partners, A J Howard, Mott MacDonald Group, M Hutchinson, Costain Building Products, D Nemegeer, Bekaer Building Products, and H Davies, London Underground Limited*	47
The automation of hard rock drilling machines *Ari Tuunanen, Tamrock, Tampere, Finland*	51
RETC PREVIEW **Technology Underground '93** *Peter Darling, The Editor*	55
TUNNEL RENOVATION **Big competition for small bore markets** *Maurice B Jones, IEng, AMI, MinE*	61
TUNNEL WATERPROOFING **A protective underground umbrella** *Arthur MacKenzie, Technical Journalist*	67

HAVE A QUESTION?

THE ANSWER
COULD BE AS CLOSE
AS YOUR TELEPHONE



CALL THE
TRANSPORTATION LIBRARY

AND SEE HOW
WE CAN HELP MEET
YOUR INFORMATION NEEDS

Transportation Research

Volume 1C, No. 2, June 1993 **Part C: Emerging Technologies**

SPECIAL ISSUE

BEHAVIORAL AND HUMAN FACTORS ISSUES IN ADVANCED TRAVELER INFORMATION SYSTEMS

Contents

Woodrow Barfield and **Fred Mannering**	105	Behavioral and human factors issues in advanced traveler information systems
Joseph L. Schofer, **Asad Khattak** and **Frank S. Koppelman**	107	Behavioral issues in the design and evaluation of advanced traveler information systems
Thomas A. Dingus and **Melissa C. Hulse**	119	Some human factors design issues and recommendations for automobile navigation information systems
Walter W. Wierwille	133	Demands on driver resources associated with introducing advanced technology into the vehicle
Peggy Crosby, **Jan Spyridakis**, **Judy Ramey**, **Mark Haselkorn** and **Woodrow Barfield**	143	A primer on usability testing for developers of traveler information systems
David Watling and **Tom van Vuren**	159	The modelling of dynamic route guidance systems
Loveday Conquest, **Jan Spyridakis**, **Mark Haselkorn** and **Woodrow Barfield**	183	The effect of motorist information on commuter behavior: Classification of drivers into commuter groups

CONTENTS



41 *Best Careers For a New Work Force*



58 *Raising Cash. Marilu Meter Of Castle Corp*

FEATURES

THE 25 HOTTEST CAREERS
Our annual report on the latest career opportunities, including health care, management and small business. *Edited by Lois Anzelowitz*
Plus: Five Smart Job-Switching Strategies *By Ann Hornaday* 41

THE PSYCHOLOGY OF CHANGE
Staying competitive in a rapidly shifting workplace requires a resilient mindset.
By Ronni Sandroff 52

DESPERATELY SEEKING CAPITAL
Women-owned businesses have always had trouble finding financing, but with Clinton's promise of increased cash flow and a host of new programs, that's starting to change.
By Jill Andresky Fraser 58

THE WORKING WOMAN QUIZ: IS HONESTY REALLY THE BEST POLICY AT WORK?
The woman who ignited the Mommy Track debate has a new theory about women's conspiracy of silence and a quiz that reveals whether you are part of the problem.
By Felice N. Schwartz 63

EMOTIONAL BAGGAGE
Your purse relationship: Are you getting as much out of it as you're putting into it?
By Betsy Israel 68

HEALTH & FITNESS

DIARY OF A MAD INSOMNIAC
A chronically caffeinated writer gets advice from the top sleep specialists.
By Karen Heller 72

WORK DREAMS
Surprise: Dreams about your job can help your performance. *By Jane Bosveld*
Plus: A Womb of One's Own 74

DEPARTMENTS

LETTER FROM THE EDITOR 6

BUSINESS BUZZ
What Went Wrong with Mrs. Fields?; Gunmakers Target Women; and more 9

HOW I DID IT
Getting the Guys On Your Side: Sara Westendorf of Hewlett-Packard 15

CAREER STRATEGIES
Rescuing Your Reputation After a Major Mistake
By Dr. Adele Scheele 19

MANAGING
The New Motivators: Corporate speakers are changing. Here's who's hot in the '90s.
By Nancy K. Austin ... 24

TECH TALK
Six Ways to Cut the Phone Bill
By Jeffrey Ubois 28

ENTREPRENEURIAL EDGE
More Cash With Less Cachet: Downscaling your product can upgrade your profits.
By Jan Alexander ... 33

YOUR MONEY
The Warranty Racket: Chances are you don't need one, no matter what the salesman says.
By Lisa Peters O'Brien .. 36

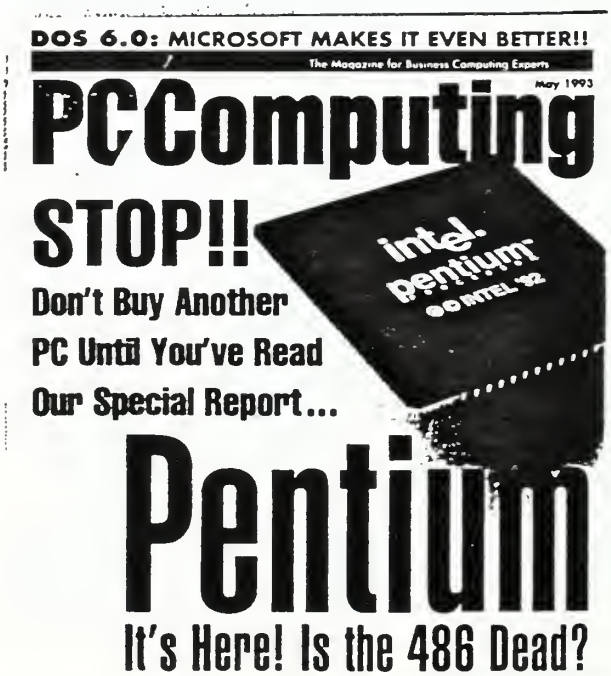
HOTLINE
Hard-to-Follow Advice; Offbeat Sources for Smart Hires; How to Give Good Meeting; and more. 39

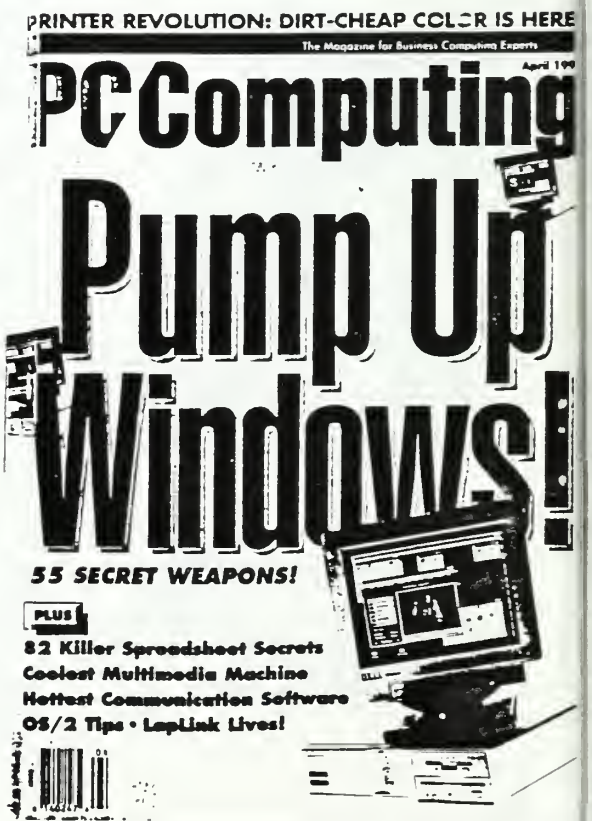
OUT-BOX
Career Survival, *Star Trek* Style
By Gail Collins 80



72 *The Dream Report. Making Sleep Pay Off*







State Transportation Library Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

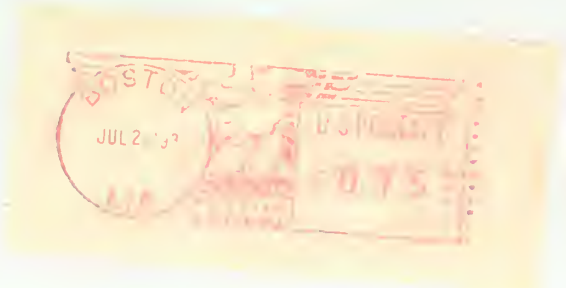
Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116



Leonard Adams
Government Docs. Coll.
University Library
Univ. of Massachusetts
Amherst, MA 01003

MASS.
>T11.3:1993/7

SELECTED ACQUISTIONS

JULY - AUGUST 1993

GOVERNMENT DOCUMENTS COLLECTION

SEP 27 1993

University of Massachusetts
Depository Copy

STATE TRANSPORTATION LIBRARY

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000

Toby Pearlstein
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Lynn Matis
Law Librarian

Irene Guthrie
Secretary

LIBRARY BULLETIN BOARD

THANK YOU

I WANTED TO TAKE THIS OPPORTUNITY TO THANK ALL OF YOU FOR HELPING TO MAKE MY TEN YEARS HERE AT THE TRANSPORTATION LIBRARY SO FULFILLING. WHEN THE LIBRARY OPENED ITS DOORS IN FEBRUARY OF 1984 IT REPRESENTED A NEW CONCEPT IN THE DELIVERY OF INFORMATION SERVICES TO TRANSPORTATION AGENCY EMPLOYEES. IT WAS TO BE AN INFORMATION SERVICE THAT WOULD PLAY AN INTEGRAL PART IN THE DAILY LIVES OF THE EMPLOYEES OF THE TENANT AGENCIES IN THE TRANSPORTATION BUILDING AND ACROSS THE STATE. I KNOW YOU WILL AGREE THAT TOGETHER WE HAVE ACCOMPLISHED THIS.

AS I LEAVE TO ACCEPT A NEW POSITION, IT IS DIFFICULT NOT TO HAVE MIXED FEELINGS. I AM LEAVING BEHIND AN EXCELLENT GROUP OF INFORMATION PROFESSIONALS AND SUPPORT STAFF WHO REMAIN COMMITTED TO THE TRADITION OF SERVICE WE HAVE ESTABLISHED AND YOU HAVE COME TO EXPECT. THEY ARE GOOD FRIENDS AND COLLEAGUES AND I WILL MISS THEM; AS I WILL MISS ALL OF YOU IN THE AGENCIES WITH WHOM I HAVE WORKED.

I HOPE YOU WILL ALL CONTINUE TO BE ADVOCATES FOR QUALITY LIBRARY SERVICES.

Ickey Frankstein

SELECTED ARTICLES FROM LEGAL PERIODICALS

A General Framework for Analyzing Choice-of-Law Problems in Air Crash Litigation by John B. Austin, *Journal of Air Law and Commerce,* Summer 1993, p.909-980.

Administrative Law Cases During 1992 by Bernard Schwartz, *Administrative Law Review,* Summer 1993, p.261-282.

Airport Security, Terrorism, and the Fourth Amendment: A Look Back and a Step Forward, *Journal of Air Law and Commerce,* Summer 1993, p.1149-1201.

Annual Report on the State of the Massachusetts Judiciary by Chief Justice Paul L. Liacos, *Massachusetts Law Review,* June 1993, p.35-39.

Beyond Litigation: New Approaches to State/Local Sector Collective Bargaining, *Labor Law Journal,* August 1993, p.464-468.

Regulatory Takings in Massachusetts After Lucas by Madelyn Morris and Mary Griffin, *Boston Bar Journal,* July/August 1992, p.14-18.

The Challenge of Designing A Successful Air Emission Trading Program in Massachusetts By Wendy Jacobs and Anne D. Berlin, *Boston Bar Journal,* June/August 1993, p.27-30.

Wrongful Dismissal: Arbitration and the Law by Paul F. Gerhart and Donald P. Crane, *Arbitration Journal,* June 1993, p,56-68.

TO ORDER A COPY OF AN ARTICLE(S), YOU MAY COMPLETE THE REQUEST FORM AT THE END OF THIS BOOKLET BY LISTING THE TITLE OF THE ARTICLE(S) AND THE NAME OF THE JOURNAL(S).

AIDS (DISEASE)--PALLIATIVE TREATMENT.

RC
607
.A26
K48
1989

Kübler-Ross, Elisabeth.
AIDS : the ultimate challenge / Elisabeth Kubler-Ross. -- 1st Collier Books ed. -- New York : Collier Books ; London : Collier Macmillan, 1989, c1987.
329 p. ; 18 cm.
ISBN 0-02-059001-6

1. AIDS (Disease)--Palliative treatment. 2. AIDS (Disease)--Psychological aspects. 3. Terminal care.

11 AUG 93 19589276 TLBAsc 89-7330

AMERICANS WITH DISABILITIES ACT.

A-V
HV
1669
.A32
S77
1993

AFB ADA Consulting Group
Strategies for community access braille and raised large print facility signs / AFB ADA Consulting Group. -- New York, NY : American Foundation for the Blind, 1993.
1 videocassette (6 min., 31 sec.) : sd., col. + fact sheet.
ISBN 0-89128-256-4

1. Americans with Disabilities Act. 2. Blind--Orientation and mobility. 3. Blind--Printing and writing systems. 4. Signs and signboard--Law and legislation.

11 AUG 93 28591228 TLBAsc

ASPHALT CONCRETE--RESEARCH--OHIO.

TE
270
.A32
L37
1992

Abdulshafi, Osama A. (Osama Ahmed), 1950-
Large aggregate asphalt concrete mixes for use in lieu of ODOT item 301 / by Osama Abdulshafi, Leon Talbert, Bosena Kedzierski. -- Columbus, Ohio : CTL International, Inc., [1992]
iii, 130 leaves : ill. ; 28 cm.
STRN: FHWA/OH-93/013

1. Asphalt concrete--Research--Ohio. 2. Pavements, Asphalt concrete--Ohio.

10 AUG 93 28316630 TLBAsc

AUTOCAD (COMPUTER FILE)

NA
2728
.H66
E27
1993

Hood, John D.
Easy AutoCAD / by John Hood. -- 3rd ed. -- Blue Ridge Summit, PA : Windcrest, 1993.
xxi, 365 p. : ill. ; 24 cm.
ISBN 0-8306-4418-0

1. AutoCAD (Computer file) 2. Architectural drawing--Data processing --Programmed instruction. 3. Computer-aided design--Programmed instruction.

10 AUG 93 27035825 TLBAsc 92-40041

BACK--EXERCISE THERAPY.

A-V
RD
771
.B217
B32

Back power [Videorecording] : the h[illegible] video. -- Thunder Bay, Ont. : Health Care Video Systems, [n.d.]
1 videocassette (52 min.) : sd., co ; 1/2 in.

1. Back--Exercise therapy. 2. Backache--Chiropratic treatment.

14 JUL 93 28406130 TLBAsc

BRIDGES--EARTHQUAKE EFFECTS.

REF.
TG
265
.G84

Guide specifications for seismic isolation design. -- Washington, D.C : American Association of State Highway and Transportation Official[illegible] v. : ill. ; 28 cm.

1. Earthquake resistant design--United States. 2. Bridges--Design and construction--Standards--United State 3. Bridges--Earthquake effects.

14 JUL 93 25363982 TLBAsc SN92-1[illegible]

BRIDGES--INSPECTION.

TG
315
.B57
D47
1992

Biswas, Mrinmay.
Detecting incipient failures in bridges / by Mrinmay Biswas, Arun K. Pandey, Mahmod M. Samman. -- [Harrisburg, PA : Pennsylvania Dept. Transportation, Office of Research & Special Studies ; Springfield, VA : Available through the National Technical Information Service, 1992]
viii, 35, A-22 p. : ill. ; 28 cm.
STRN: FHWA-PA-91-004+86-10

1. Bridges--Inspection. 2. Bridges--Maintenance and repair. 3. Bridge failures.

20 JUL 93 28132323 TLBAsc

BRIDGES, IRON AND STEEL--CORROSION.

TG
380
.K63
E58
1992

Kogler, Robert.
Environmentally acceptable material for the corrosion protection of steel bridges. Task C, Laboratory evaluation / Robert Kogler and William Mott. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 107 p. : ill. (some col.) ; 28 cm.
STRN: FHWA-RD-91-060

1. Bridges, Iron and steel--Corrosion. 2. Bridges, Iron and steel--Maintenance and repair. 3. Protective coatings--Environmental aspects. 4. Corrosion and anti-corrosives.

20 JUL 93 27350887 TLBAsc

BRIDGES, IRON AND STEEL--DESIGN AND CONSTRUCTION.

REF.
TG
350
.A43
G84
1991

American Association of State Highway and Transportation Officials. Highway Subcommittee on Bridges and Structures.
Guide specifications for alternate load factor design procedures for steel beam bridges using braced compact sections, 1991. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1991.
vii, 42 p. : ill. ; 28 cm.

1. Bridges, Iron and steel--Design and construction. 2. Bridges, Iron and steel--Specifications. 3. Bridges--Live loads.

14 JUL 93 25292854 TLBAsc

BRIDGES, IRON AND STEEL--INSPECTION.

TG
380
.S68
A52
1992

South, Jeffrey M.
Analysis, inspection, and repair methods for pin connections on Illinois bridges / by Jeffrey M. South, Christopher Bahin, Richard O. Telford. -- Springfield, Ill. : Illinois Dept. of Transportation, Bureau of Materials and Physical Research ; [Springfield, VA : Available through the National Technical Information Service, 1992]
v, 83, A6, B2 leaves : col. ill. ; 28 cm. -- (Physical research report ; no. 107)
STRN: FHWA/IL/PR-101
1. Bridges, Iron and steel--Inspection. 2. Bridges--Illinois--Testing. 3. Ultrasonic testing.

20 JUL 93 26499605 TLBAsc

BRIDGES--UNITED STATES.

TG
23
.L36
1992

Landmark American bridges / [edited] by Eric DeLony. -- New York, N.Y. : American Society of Civil Engineers, c1992.
viii, 152 p. : ill ; 24 x 29 cm.
ISBN 0-87262-857-4

1. Bridges--United States. 2. Historic bridges--United States. 3. Bridges--United states--Pictorial works.

14 JUL 93 26258788 TLBAsc 92-24530

BUILDING--DETAILS--DRAWINGS.

REF.
Oversize
TH
2031
.A84
1988

Ramsey, Charles George, 1884-1963.
[Architectural graphic standards]
Ramsey/Sleeper architectural graphic standards. -- 8th ed. / John Ray Hoke, Jr., editor in chief. -- New York : Wiley, c1988.
854 p. : ill. ; 30 cm.
ISBN 0-471-81148-3

1. Building--Details--Drawings.

12 AUG 93 17106747 TLBAsc 87-31746r90

COLLECTION LAWS--MASSACHUSETTS.

LAW
Oversize
KFM
2567
.C6
C65
1990

Massachusetts collections manual / Kamberg, Berman, & Gold, P.C., Eugen B. Berman ... [et al.]. -- 2nd ed. -- Salem, N.H. : Butterworth Legal Publishers, c1990-
1 v. (loose-leaf) ; 30 cm.
ISBN 0-88063-398-8

1. Collection laws--Massachusetts. 2. Debtor and creditor--Massachusetts.

10 AUG 93 21767421 TLBAsc 90-16101

COMMERCIAL CORRESPONDENCE--HANDBOOKS MANUALS, ETC.

BF
5726
.K63
1994

Komando, Kim.
401 great letters / Kim Komando. -- Homewood, Ill. : Business One Irwin, c1994.
xvi, 409 p. ; 28 cm.
ISBN 1-55623-833-8

1. Commercial correspondence--Handbooks, manuals, etc.

09 JUL 93 27221933 TLBAsc 92-424

COMPUTER GRAPHICS.

T
385
.M87
G72
1993

Murray, Katherine, 1961-
The graphics coach / by Kathy Murray -- Carmel, Ind. : New Riders Pub., c1993.
xv, 348 p. : ill. ; 23 cm. + 1 computer disk (5 1/4 in.). -- (Personal trainer series)
ISBN 1-56205-129-6

1. Computer graphics.

14 JUL 93 27186625 TLBAsc 92-425

CRISIS MANAGEMENT--UNITED STATES--CASE STUDIES.

BD
58.2
.C74
1993

Crisis response : inside stories on managing image under siege / Jack Gottschalk, editor. -- Detroit : Gale Research, c1993.
xxi, 463 p. : ill. ; 25 cm.
ISBN 0-8103-8903-7 (acid-free paper)

1. Corporate image--United States--Case studies. 2. Crisis management--United States--Case studies. 3. Public relations--Corporations--United States--Case studies.

Rev-1 8-12-93 TLBAsc 93-105

DRINKING AND TRAFFIC ACCIDENTS--RESEARCH--UNITED STATES.

HE
131
.T687c
no.408

Alcohol and other drugs in transportation : research needs for the next decade. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
114 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 408)

1. Drinking and traffic accidents--Research--United States. 2. Aeronautics--United States--Accidents. 3. Transportation--Research--United States. 4. Alcoholism--Research--United States. 5. Drug abuse--Research--United States.

19 JUL 93 28381731 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.G34
A66
1992

Gallimore, W. Paul.
Applications of GIS-transportation analysis packages in super-regional transportation modeling / by W. Paul Gallimore, David T. Hartgen, Yuanjun Li. -- Charlotte, N.C. : University of North Carolina at Charlotte, Dept. of Geography and Earth Sciences, [1991]
24 leaves : maps ; 28 cm. -- (Transportation publication report ; no. 56)

1. Geographic information systems. 2. Transportation--Planning--Mathematical models.

Rev-1 8-10-93 TLBAsc

ELECTRIC RAILROADS--COLD WEATHER OPERATION.

TF
542
.C64
v.1

Kleinaan, Robert L.
Cold weather transit technology program : Volume 1, Executive summary / Robert L. Kleinman, Keith H. Kahle, William H. Berry. -- Washington, D.C. : Federal Transit Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
x, 34 p. : ill. ; 28 cm.
STRN: FTA-IN-06-0018-92-1

1. Electric railroads--Cold weather operation. 2. Electric railroads--Third rail. 3. Railroads--Snow protection and removal. 4. Ice prevention.

10 AUG 93 28444362 TLBAsc

GOVERNMENT CONTRACTORS--UNITED STATES.

HD
3861
.U6
U55
1991

United States. General Accounting Office.
Government contractors : are service contractors performing inherently governmental functions? : report to the Chairman, Federal Service, Post Office and Civil Service Subcommittee, Committee on Governmental Affairs, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : U.S. General Accounting Office [distributor 1991]
136 p. : ill. ; 28 cm.

10 AUG 93 25022870 TLBAsc SEE NEXT CF

EXPRESS HIGHWAYS--ECONOMIC ASPECTS--NORTH CAROLINA.

HE
336
.E3
S88
1991

Stuart, Alfred W.
I-40 economic impact study : labor shed analysis / by Alfred W. Stuart and Sarah W. Belle. -- Charlotte, N.C. : University of North Carolina at Charlotte, [Center for Interdisciplinary Transportation Studies], [1991]
ii, 16 p. : ill. ; 28 cm.

1. Commuting--North Carolina. 2. Traffic estimation--North Carolina. 3. Employment forecasting--North Carolina. 4. Express highways--Economic aspects--North Carolina. 5. Roads--Economic aspects--North Carolina.

12 JUL 93 27655053 TLBAsc

HARVARD GRAPHICS FOR WINDOWS.

A-V
T
385
.I57
1992

Introduction to Harvard graphics for Windows [videorecording]. -- Pryor, OK : ViaGrafix, [1992?]
1 videocassette : sd., col. ; 1/2 in. + 1 computer disk. -- (ViaGrafix video training series)
ISBN 0-922264-01-5

1. Harvard graphics for Windows. 2. Harvard graphics (Computer program). 3. Computer graphics--Computer programs.

02 AUG 93 27116093 TLBAsc

EXPRESS HIGHWAYS--ECONOMIC ASPECTS--NORTH CAROLINA.

HE
336
.E3
B62
1991

Blackburn, Sabrina P.
Interstate 40 economic impact study : impacts of highway bypasses on community businesses / by Sabrina P. Blackburn and James W. Clay. -- Charlotte, N.C. : University of North Carolina at Charlotte, Dept. of Geography and Earth Sciences, [1991]
v, 49 leaves : ill. ; 28 cm. -- (Transportation publication report ; no. 66)

1. Highway bypasses--Economic aspects--North Carolina. 2. Express highways--Economic aspects--North Carolina.

12 JUL 93 27389450 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--UNITED STATES--CASE STUDIES.

HE
336
.H4
I52
1992

Increasing the productivity of the nation's urban transportation infrastructure : measures to increase transit use and carpooling : final report / prepared by John F. Kain ... [et al.] ; prepared for University Research and Training Program, Federal Transit Administration. -- Washington, D.C. : The Administration : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1992]
1 v. (various pagings) : ill. ; 28 cm.

09 JUL 93 28255420 TLBAsc SEE NEXT CP

HIGHWAY BYPASSES--ECONOMETRIC MODELS.

HE
336
.E3
E27
1992

Economic effects of highway bypasses on business activities in small cities / Reijo Heleakoski ... [et al.]. -- Austin : Center for Transportation Research, the University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xii, 72 p. : ill. ; 28 cm. -- (Research report ; no. 1247-1)
STRN: FHWA/TX-93+1247-1

1. Highway bypasses--Econometric models. 2. Highway bypasses--Texas. 3. Roads--Economic aspects--Texas. 4. Highway relocation--Economic aspects--Texas.

10 AUG 93 28467248 TLHAsc

HIGHWAY COMMUNICATIONS--RESEARCH--UNITED STATES.

TE
228.3
.D46
1993

Department of Transportation's intelligent vehicle highway systems projects / [coapiled by Federal Highway Administration, Office of Traffic Management and IVHS ... et al.]. -- [Washington, D.C. : U.S. Dept. of Transportation, Federal Highway Administration, 1993]
viii, 197, [6] p. ; 28 cm.
STRN: FHWA-SA-93-027

1. Highway communications--Research--United States.

02 AUG 93 27993405 TLHAsc

HIGHWAY PLANNING--UNITED STATES.

TE
153
.G84
1993

Guide to metric conversion. -- [Washington, D.C.?] : American Association of State Highway and Transportation Officials, c1993.
xii, 106 p. ; 28 cm.
ISBN 1-56051-059-5

1. Highway planning--United States. 2. Metric system--United States--Handbooks, manuals, etc. 3. Weights and measures--United States. 4. Highway engineering--United States.

14 JUL 93 28304775 TLHAsc

INFRASTRUCTURE (ECONOMICS)--UNITED STATES--FINANCE.

KF
27
.P884
1993

United States. Congress. House. Committee on Public Works and Transportation. Subcommittee on Economic Development.
Investing in America's infrastructure : short- and long-term strategies : hearings before the Subcommittee on Economic Development of the Committee on Public Works and Transportation, House of Representatives, One Hundred Third Congress, first session, January 15; February 2, 3, 1993. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1993.
v, 573 p. : ill. ; 24 cm.
ISBN 0-16-0 40804-0

09 JUL 93 28237148 TLHAsc SEE NEXT CRD

LOCAL AREA NETWORKS (COMPUTER NETWORKS)

TK
5105.7
.N53
I57
1992

Niedermiller-Chaffins, Debra E., 1963-
Inside Novell netware / by Debra Niedermiller-Chaffins. -- Special ed. -- Carmel, Ind. : New Riders Pub., c1992.
xx, 808 p. : ill. ; 23 cm + 1 computer disk (5 1/4 in.).
ISBN 1-56205-096-6

1. Local area networks (Computer networks) 2. NetWare (Computer file) 3. Operating systems (Computers)

11 AUG 93 26761503 TLHAsc 92-34439r

LOCAL TRANSIT--UNITED STATES--FINANCE.

HE
4351
.I58
1993

Introduction to public finance and public transit / prepared by Public Financial Management, Inc. -- [Washington, D.C.] : Federal Transit Administration, Office of Technical Assistance and Safety ; [Springfield, VA : Available through the National Technical Information Service, 1993
200 p. : charts ; 28 cm.
STRN: FTA-VA-26-0002-93-1

1. Local transit--United States--Finance. 2. Local transit--United States--Management.

10 AUG 93 28449956 TLHAsc

MASS MEDIA--NEW ENGLAND--DIRECTORIES

REF.
P
88.8
B87

Burrelle's New England media directory -- 1988- . -- Livingston, NJ : Burrelle's Media Directories, 1988-
v. : ill. ; 28 cm.
Cover title: Burrelle's media directory, New England.
Spine title: New England media directory.
Continues: New England media directory.
ISSN 0883-9999 = Burrelle's New England media directory

1. Mass media--New England--Directories.

04 AUG 93 18568885 TLHAsc SN89-250

MICROSOFT EXCEL 4 FOR WINDOWS.

A-V
HF
5548.4
.E93
I57
1992

Introduction to Excel, 4.0 [videorecording]. -- Pryor, OK : ViaGrafix, [1992?]
1 videocassette : sd., col. ; 1/2 in + 3 1/2 in. computer disk. -- (ViaGrafix video training series)

1. Microsoft Excel 4 for Windows. Business--Computer programs. 3. Electronic spreadsheets. 4. Windows (Computer programs)

27 AUG 93 27064343 TLHAsc

MICROSOFT EXCEL 4 FOR WINDOWS.

A-V
HF
5548.4
.E83
U84
1992

Using Excel 4.0 advanced [videorecording]. -- Pryor, OK : ViaGrafix, [1992?]
1 videocassette : sd., col. ; 1/2 in. + 3 1/2 in. computer diek. -- (ViaGrafix video training series)

1. Microsoft Excel 4 for Windows. 2. Business--Computer programs. 3. Electronic spreadsheets. 4. Windows (Computer programs)

27 AUG 93 27064394 TLBAsc

OS/2 (COMPUTER FILE)

A-V
QA
76.76
.O63
G47
1992

Getting started with OS/2, version 2.0 [videorecording]. -- Pryor, OK : ViaGrafix, c1992.
1 videocassette : sd., col. ; 1/2 in -- (ViaGrafix video training series) (Video tutor)
ISBN 0-922264-01-5

1. OS/2 (Computer file) 2. Operating systems (Computers)

03 AUG 93 27828713 TLBAsc

MULTIMEDIA SYSTEMS.

QA
76.575
.G84
1993

A Guide to multimedia / Victoria Rosenborg ... [et al.]. -- Carmel, Ind. : New Riders Pub., c1993.
xxiii, 502 p. : ill. ; 23 cm. + 1 computer disk (5 1/4 in.).
ISBN 1-56205-082-6

1. Multimedia systems.

03 AUG 93 27186415 TLBAsc 92-46579

PAVEMENTS, ASPHALT--ADDITIVES

TE
270
.G84
1992

Guide specifications polymer modified asphalt/ AASHTO-AGC- ARTBA Joint Committee, Subcommittee on Highway Materials, Task Force 31 report. -- [Washington, D.C.: American Association of State Highway and Transportation Officials,] 1992
18 p. : ill. ; 28 cm.

1. Pavements, Asphalt--Additives 2. Polymers 3. Binders

19 JUL 93 27197571 TLBAsc

NAUTICAL CHARTS.

VK
560
.G69
D53
1992

Goydan, R.
Digital chart database conversion into a system electronic navigational chart / Barry D. MacRae ... [et al.]. -- Washington, DC : U.S. Coast Guard, Office of Engineering, Logistics, and Development ; Springfield, Va. : Available through the National Technical Information Service, [1992]
44 p. in various pagings : ill. (some col.) ; 28 cm.
STRN: CG-D-15-92

1. Nautical charts. 2. Electronics in navigation. 3. Geographic information systems.

20 JUL 93 27126775 TLBAsc

PAVEMENTS--SUBGRADES.

TE
211
.P49
D48
1992

Pezo, Rafael F.
Development of a reliable resilient modulus test for subgrade and non-granular subbase materials for use in routine pavement design / by Rafael F. Pezo ... [et al.]. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 181 p. : ill. ; 28 cm. -- (Research report ; 1177-4F)
STRN: FHWA/TX-90+1177-4F
1. Pavements--Subgrades. 2. Pavements--Design and construction. 3. Road material [illegible]e--Testing.

20 JUL 93 27847204 TLBAsc

OCEAN LINERS--HISTORY.

Oversize
VM
381
.M32
G73
1978

Maddocks, Melvin.
The great liners / by Melvin Maddocks and the editors of Time-Life Books. -- Alexandria, Va. : Time-Life Books, c1978.
176 p. : ill. ; 29 cm. -- (The Seafarers ; [v. 4])
ISBN 0-8094-2664-1

1. Ocean liners--History. 2. Ocean travel--History.

19 JUL 93 3650075 TLBAsc 78-1366

PILING (CIVIL ENGINEERING)--DESIGN.

TA
780
.D48
1993

Design of pile foundations. -- New York, N.Y. : American Society of Civil Engineers, c1993.
iv, 96 p. : ill., map ; 28 cm. -- (Technical engineering and design guides as adapted from the U.S. Army Corps of Engineers ; no. 1)
ISBN 0-87262-930-9

1. Piling (Civil engineering)--Design.

14 JUL 93 27146002 TLBAsc 92-437

ROAD MATERIALS--TESTING.

TE
205
.W54
D57
1993

White, David P.
Disposal of waste from highway materials testing laboratories / [David F. White and Richard M. White]. -- McLean, Va. : Federal Highway Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
xiii, 155 p. : ill. ; 28 cm.
STRN: FHWA-RD-91-125

1. Road materials--Testing. 2. Road materials--Environmental aspects. 3. Waste disposal.

14 JUL 93 28356937 TLBAsc

ROADS--FINANCE--CONGRESSES.

HE
355.3
.F3
R68
1989

Round Table on Transport Economics (80th : 1989 : Paris, France)
Report of the eightieth Round Table on Transport Economics, held in Paris on 8th-10th February 1989 on the following topic : systems of road infrastructure cost coverge. -- Paris : OECD Publications, 1989.
185 p. : ill. ; 24 cm.
ISBN 928211144X

1. Roads--Finance--Congresses. 2. Toll roads--Congresses.

02 AUG 93 20951240 TLBAsc 90-148462

ROADS--UNITED STATES--DESIGN AND CONSTRUCTION.

REF.
TE
175
.A541
1993

AASHTO Task Force on Geometric Design.
Interim selected metric values for geometric design : an addendum to A policy on geometric design of highways and streets, 1990 / prepared by the AASHTO Task Force on Geometric Design. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1993.
vi, 4, [8] p. ; 22 cm.

1. Roads--United States--Design and construction.

12 JUL 93 27933314 TLBAsc

ROCK SLOPES.

TA
706
.R67
1979

Rock slope engineering / by D.R. Piteau and Associates Limited. -- Washington, D.C. : Federal Highway Administration, Office of Development, Implementation Division : U.S. Dept. of Commerce, National Technical Information Service [distributor], 1979.
2 v. : ill. ; 28 cm.

1. Engineering geology. 2. Rock slopes. 3. Highway engineering.

30 JUL 93 9561512 TLBAsc

SEXUAL HARASSMENT.

A-V
HD
6060.3
.S49
1992

Sex, power & the workplace [videorecording]. -- Los Angeles, Calif. : KCET Video, 1992.
1 videocassette (VHS) (60 min.) : sd., col with b&w sequences ; 1/2 in. guide (22 p. : ill. ; 19 cm.). -- (Lifeguides)

1. Sexual harassment of women. 2. Sexual harassment.

30 JUL 93 27607579 TLBAsc

SOIL MECHANICS--UNITED STATES--COMPUTER PROGRAMS.

TA
710.2
.L52
D47
1992

Liang, Robert Y.
Determination of wave equation soil parameters using in-situ testing techniques / by Robert Y. Liang. -- Akron, Ohio : University of Akron, Dept. of Civil Engineering ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xvii, 306 p. : ill. ; 28 cm.
STRN: FHWA/OH-93/009

1. Soil mechanics--United States--Computer programs. 2. Earthwork--United States--Computer programs.

10 AUG 93 27980154 TLBAsc

TELECOMMUTING--UNITED STATES.

HD
2333
.T72
1993

Transportation implications of telecommuting. -- [Washington, D.C.] : U.S. Dept. of Transportation, [1993]
1 v. (various pagings) : charts ; 28 cm.

1. Telecommuting--United States. 2. Commuting--United States. 3. Transportation--United States.

10 AUG 93 28312807 TLBAsc

TRAFFIC CONGESTION--UNITED STATES--STATISTICS.

HE
336
.C64
S37
1993

Schrank, David.
Estimates of urban roadway congestion, 1990 / David Schrank, Shawn Turner, Timothy J. Lomax ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, U.S. Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xviii, 69 p. : ill ; 28 cm. -- (Research report ; 1131-5)
STRN: FHWA/TX-90/1131-5

14 JUL 93 28393187 TLBAsc SEE NEXT C

TRAFFIC CONGESTION--WASHINGTON (STATE)--SEATTLE--MANAGEMENT.

HE
372
.S43
K63
1991

Koehne, Jodi.
Development of incident management systems : the Seattle case study / by Jodi Koehne, Fred L. Mannering, Mark Hallenbeck, Washington State Transportation Center. -- [Olympia] : Washington State Dept. of Transportation, [Planning, Research and Public Transportation Division ; Springfield, VA : Available through the National Technical Information Service, 1991]
vi, 74 p. : maps ; 28 cm.

10 AUG 93 25618014 TLBAsc SEE NEXT CRD

TRANSPORTATION AND STATE.

HE
206.2
.A27
1991

Acting in the national interest : the transportation agenda / Surface Transportation Policy Project. -- Washington, D.C. : The Project, [1991]
32 p. : ill. ; 28 cm.

1. Transportation and state.

10 AUG 93 26372688 TLBAsc

TRAFFIC FLOW--COMPUTER SIMULATION.

TE
175
.R39
A52
1992

Raza, Syed Shariq, 1957-
An analysis of expected delay reduction by replacing a congested at-grade intersection with an interchange / by Syed Shariq Raza and Vergil G. Stover. -- Rev. Nov. 92. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; Springfield, Va. : available through National Technical information Service, [1992]
xvi, 84, [127] p. : ill. ; 28 cm. -- (Research report ; 1237-1)
1. Traffic flow--Computer simulation. 2. Traffic congestion. 3. Roads--Interchanges and intersections. 4. Traffic engineering.

20 JUL 93 28385124 TLBAsc

TREES IN CITIES.

SB
436
.P54
U92
1993

Phillips, Leonard E.
Urban trees : a guide for selection, maintenance, and master planning / Leonard E. Phillips, Jr. -- New York : McGraw-Hill, c1993.
ix, 273 p. : ill. ; 24 cm.
ISBN 0-07-049835-0

1. Trees in cities.

14 JUL 93 27172754 TLBAsc 92-437

TRAFFIC SIGNS AND SIGNALS--CALIFORNIA--EVALUATION.

TE
228
.M66
C87
1993

Moore, Robert L.
Curve warning sign study / State of California, Business, Transportation and Housing Agency, Department of Transportation, Division of Traffic Operations. -- [Sacramento] : The Division ; [Springfield, VA : Available through the National Technical Information Service, 1993]
i, 17 p. : ill. ; 28 cm.
STRN: FHWA/CA/TO-91/4
1. Traffic signs and signals--California--Evaluation. 2. Highway engineering--California. 3. Curves in engineering. 4. Traffic accidents--California--Statistics.

20 JUL 93 27872755 TLBAsc

WELDING.

TS
227.2
.L36
B36
1993

Lancaster, J. F. (John Frederick)
Handbook of structural welding / John Lancaster. -- New York : McGraw-Hill, c1993.
viii, 436 p. : ill ; 24 cm.
ISBN 0-07-031684-8

1. Welding. 2. Steel, Structural--Welding.

14 JUL 93 26589784 TLBAsc 92-20

TRAFFIC SIGNS AND SIGNALS--UNITED STATES.

TE
228
.P36
D48
1992

Pant, Prahlad D.
Development of guidelines for installation of intersection control beacons / Prahlad D. Pant, Yongjin Park and Subbarao V. Neti. -- [Cincinnati, Ohio] : University of Cincinnati, [Dept. of Civil and Environmental Engineering ; Springfield, VA : Available through the National Technical Information Service, 1992]
1 v. (various pagings) : ill. ; 28 cm.
STRN: FHWA/OH-93/006

1. Traffic signs and signals--United States. 2. Rural roads--United States.

20 JUL 93 27980147 TLBAsc

WORDPERFECT (COMPUTER PROGRAM)

A-V
Z
52.5
.W65
W67
1990

WordPerfect 5.1 [videorecording] : learning for windows. -- Pryor, OK : ViaGrafix, c1990.
1 videocassette (65 min.) : sd., col. ; 1/2 in. + 1 computer disk (3 1/2 in.). -- (Video tutor) (ViaGrafix video training series)
ISBN 0-922264-01-5

1. WordPerfect (Computer program) Word processing--Computer programs.

03 AUG 93 24168404 TLBAsc

AMERICAN DEMOGRAPHICS

SEPTEMBER 1993 VOL. 15, NO. 9 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

Easy Money 30

Growth in the credit-card business is slow, so banks are promoting debit cards and other new ways to pay. One experimental "smart card" will eventually combine credit and debit services with personal identification and even a library pass. Will debit-wary consumers buy it? ..... *by William Dunn*

Has Fitness Peaked? 36

Overall fitness participation declined 10 percent between 1985 and 1990, according to a new survey. Among 22 activities, only walking, bicycling, and basketball gained in popularity. Americans of all ages are entering an era of moderation. ..... *by John P. Robinson and Geoffrey Godbey*

The Birth Business 44

Products and services that assist birth prospered during the baby boomlet, but the supply of babies will level off in the 1990s. Today's mothers demand one-stop birthing rooms, childbirth education, and other extras from their hospitals. Some affluent women are even rejecting hospitals for a new but old-fashioned alternative—birthing centers. ..... *by Paula Mergenbagen DeWitt*

How to Find Online Information 52

Online research can dramatically increase your productivity, but it can also be expensive. Here's how to do a thorough search for business information with peak efficiency. ..... *by Katherine S. Chiang*

BUSINESS REPORTS

When Boomers Meet the Reaper 9

Canadian Privacy Code Shows U.S. the Way 15

Why Healthy Teeth Make Dentists Happy 20

Do Florida Seniors Lack School Spirit? 22

Cat Beats Dog, Wins Spot in House 24

Eating Right Is Hard to Do 26

DEPARTMENTS

Editor's Note
Your Toughest Problems 2

Seasons
The Grandbaby Boom 4

Multimedia
Teaching on Television 6

Letters 57

The Lincoln Sample 58

Demographic Forecasts
Easy Money's Future 59

New Frontiers
Cool Breezes 60

Hispanic BUSINESS

July 1993 Volume 15 Numbe



34

Singer Mariah Carey is among the 20 highest-paid entertainers on the HISPANIC BUSINESS headliners list



52

Texas Ranger Rafael Palmeiro ranks number six among professional baseball's best-paid Hispanic players



Actress Laura Fabian is dabbling in the business world, placing her name on a line of cosmetics for Hispanic women

COVER STORY
TOP OF THE POPS 38
The highest paid stars in music, film, and TV

PURCHASING
A LOVE AFFAIR WITH MOVIES 12
When it comes to entertainment, expenditures surpass $6.2 billion

MARKETING
LIFE AFTER LA BAMBA 18
When will Hollywood give stories and actors a chance to shine?

NEWS
THE LATEST SHOW BIZ BUZZ 26
We've got a hot director, a happy marriage, and questionable casting

CAREERS
IN TUNE WITH HER WORK 34
Mariah Carey is staking her place as a leader in the music industry

EARNINGS
THE BEST IN THEIR FIELD 52
These born-in-the-USA athletes are baseball's highest paid

VENDORS
CONTACTS FOR CONTRACTS 58
City, county, and state governments that want your business

pc trans

Summer 1993 Issue

contents

features
18 GIS 101
19 GIS on the Cheap
22 Albuquerque's Geographical Pavement Rating & Inventory System
25 Using GIS for Roadway Management

bootstraps
12 Your Keyboard is Your Friend

leading edge
14 AutoDESK: Bridging the Gap Between CAD and Visualization

tech file
16 How to Get Effective Technical Assistance

reviews
28 Days Of Calculators
29 YUKON!
30 STREET
30 AutoTURN

mlr

Monthly Labor Review

August 1993
Volume 116, Number 8

Deborah P. Klein, *Editor-in-Chief*
Robert W. Fisher, *Executive Editor*

Articles

3 **The diversity of Hispanics in the U.S. work force**
Hispanics have immigrated from different countries at different times, for different reasons, and have settled in various parts of the United States
Peter Cattan

16 **Recent data on job prospects of college-educated youth**
There has been a slight shift toward technical, sales, and administrative occupations and toward lower paying service industries
Paul Ryscavage

27 **Training among young adults: who, what kind, and for how long**
Whites and men were more likely to receive company training, while nonwhit and women were more highly represented in off-the-job training programs
Jonathan R. Veum

Reports

33 CPS contemporaneous and retrospective unemployment compared
Phillip B. Levine

39 Contributions by working wives to family incomes
Howard V. Hayghe

44 Health care plans covering outpatient x-rays and lab tests
Arthur C. Williams

AMERICAN CITY & COUNTY®

July 1993 Vol. 108, No. 8

COLUMNS
4 **Editor's View** . EPA Grout Ban is a Mistake
8 **Information Technology** Pinpointing BBS Services
10 **Financial Management** Bond Insurance Helps Protect Localities
14 **Inside Washington** ..Superfund Tinkering May Ease Local Burden

WASTEWATER
38 The Gathering Storm
Stormwater regulations are looming large on the municipal horizon. Smaller communities can avoid a big hit by planning now to meet imminent deadlines ☐ **40** EPA Bids To Reassert Regulatory Authority with Grout Ban ☐ **42** Louisiana Parish Saves $400,000 Annually with O&M Contract ☐ **44** Chicago Sewer Department Saves with Privatization ☐ **44** Innovative System Earns City Wastewater Award ☐ **53** Sewer Pipe Liner Project is a Hit in Lakewood

COVER STORY
30 Critical Care for Counties
. The national spotlight shines on Monterey County, Calif. Supervisor Barbara Shipnuck as she leads the charge for county governments in the upcoming health care reform battle. Just one of the many reasons she has been selected *American City & County's* 1993 County Leader of the Year.

RESOURCE RECOVERY/ SOLID WASTE SUPPLEMENT
RR/SW 1 Garbage: Gold at the End of the Rainbow
No longer are landfills synonymous with dumps. Instead, they are being cultivated as the latest concept in active waste management, as experts develop technologies for landfill mining, leachate recirculation and methane gas-to-energy systems ☐ **RR/SW 6** Working Together To Solve the Garbage Crisis ☐ **RR/SW 10** Composting Comes of Age ☐ **RR/SW 11** Sanger Wins Solid Waste Award ☐ **RR/SW 13** Drop-Off Centers Put Polystyrene in its Place ☐ **RR/SW 14** From Adversaries to Advocates

Journal of
Urban Planning and Development
Volume 119 Number 3 September 1993

SPECIAL ISSUE: SUCCESFUL LAND DEVELOPMENT: MANAGING AND PAYING FOR GROWTH

EDITORIAL v

TECHNICAL PAPERS

Hawaii: Growth, Government, and Economy
Wright Hiatt 97

Growth Management in the City of San Diego Planning the Future Now
Randi F. Coopersmith, Richard L. Miller, and Christopher J. Morrow 116

Housing Linkage Fees: Lessons for Los Angeles
Paul A. Novak 125

Commercial Growth Management Techniques in San Francisco
Katherine H. Crocker and Dawn K. Haeckel 137

DISCUSSION

Positive Influence of Impact-Fee in Urban Planning
A. C. Nelson, J. E. Frank, and J. C. Nicholas
By Farnum W. Kerr 152

AMERICAN CITY & COUNTY®

August 1993 Vol. 108, No. 9

COLUMNS
4 **Editor's View** The Mayor Gets a Sinking Feeling
8 **Information Technology** Dishing Up Wireless Technology
10 **Financial Management** Enhancing Cash Reserves
14 **Inside Washington** National Service Program Draws Support

COVER STORY
22 Technology: At Your Service
Client/Server systems can increase productivity and efficiency in government offices with shared information networks ☐ **24** CAGIS Restores Order to Cincinnati's Infrastructure ☐ **28** Your Number is Up — On the Computer Screen ☐ **32** Scanning the Paperwork Horizon ☐ **40** Louisville Computer-Links Metro Boundaries ☐ **42** Stemming the Paper Tide

ADA COMPLIANCE
44 One Year and Counting
On the first birthday of the Americans with Disabilities Act deadlines, cities and counties are still trying to figure out their responsibilities and requirements ☐ **48** Heritage Park Lets Children Play "Side by Side"

GOVERNMENT INSURANCE
51 Making Worker's Comp Painless
Incentives to reduce and manage underlying insurance costs are becoming more prevalent. The private sector has adopted claim management approaches to capitalize on these incentives. Devoting the same attention to cost control can be beneficial for the public entity employer as well ☐ **56** Driver Training Programs Can Lessen Municipal Liability

HAZARDOUS WASTE
58 Going Around in CERCLA
The *Transportation Leasing* lawsuit, pending in California, is being closely watched nationwide as a landmark case in the issue of municipal responsibility in hazardous waste disposal. ☐ **62** Small Communities Get a Hold on Hazardous Waste ☐ **66** Sauk County Settles Superfund Case ☐ **68** 'Site'-ing a Good Example

BusRide
ISSN 0192 8902 July 1993

FEATURE ARTICLES

36 Marathon Coach - A decade of creating luxury coach conversions
40 *George M. Smerk*: Transportation in 'Park'
42 Customer-friendly TRIPS system should make bus travel more efficient and convenient, says Greyhound
44 Technological developments, tours, and many awards presented at Indianapolis APTA Conference
45 First North Star Forum set for September 23-24
48 Exec Plus service enables Trentway-Wagar to fill a high-demand marketplace niche
50 POW WOW celebrates silver anniversary in New Orleans
50 Canadian, Liberty, Frontier forums set for this fall
52 World Youth Day '93 and visit by Pope John Paul II to bring thousands of visitors to Colorado next month
53 Bonanza Forum in Sacramento to cover natural gas as a bus fuel
56 Inaugural Canadian Bus Expo, sponsored by CBA and major provincial associations, proves successful
57 UITP takes its 50th International Congress 'Down Under'
58 On the move with the new Blue Bird Corporation
62 Husband-wife team finds a hot market in the Southwest
63 More than 400 exhibitors committed for IPTE '93
66 Show and Tell: An audio/video overview
72 Red carpet rolled out by Islanders for Aloha Bus Maintenance Forum
75 Pioneer Forum to mark 30 years of maintenance forums
75 European Coach and Bus Show October 15-20 in Kortrijk, Belgium
76 Worker compensation, accident prevention, and training among discussion topics at Aloha Fleet Safety Forum

CONTENTS

July, 1993
Volume 2, Number 7

IMAGING
The Imaging Industry Magazine

Application

CREATE BRILLIANT ADS — ON DEADLINE — WITH IMAGING 54

Page layout, photo manipulation and desktop imaging are all tools of the advertising trade. Ad agencies love the immediacy and the economies of imaging.

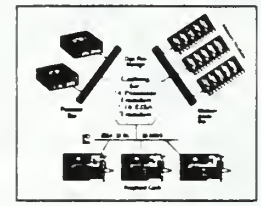
Why Pre-Press Houses Love Quantel's Paintbox 56
How Colorhouse Created Verbatim's Fabulous Pterodactyl Ad 56
How Looking Glass' 3D Packaging Packs a Punch 58
From Idea to Reality, Oswego Takes Every Step With In-House Imaging 59
Advice from Maui & Sons: Diversity Essential 59
3 Score Advertising Gets Immediate Results With Digital Photography 60
Pacific Bell Saves $8M A Year With Imaging 60
How'd They Do That: Tandem Ad? 61

Roundup

IMAGING SERVERS NEED MUSCLE 26

Imaging servers need maximum I/O, storage and processing power. A puny server means bottlenecks and S-L-O-W response times. The makers have taken different approaches. An explanation and buyer's guide.

Picking a Network Operating System 37
Apple 34
Compaq 32
Netframe 32
The Network Connection 36
Tricord 35



Roundup

WHICH MAGNETIC STORAGE FOR YOUR IMAGES? AND WHEN? 62

Image storage is a three-way trade-off: Cost vs. Speed vs. Capacity. There are perfect solutions to every mix. Picking the correct one for you is the trick. A roundup of tape drives and disk arrays.

Primary and Secondary Storage: A Tutorial 62
Removable Disk Drives Ranked by Cost Per Meg 64
RAID Storage: A Tutorial 65
Can a Tape Drive Act as a Hard Drive? 65
DAT Tape Drives Ranked by Cost Per Meg 68
QIC Tape Ranked by Cost Per Meg 69
8mm Tape Drives Ranked by Cost Per Meg 70
Half-Inch Tape Drives Ranked by Cost Per Meg 70
Bosch's Massive Storage Library 71
Disk Arrays Ranked by Capacity 72
Understanding Capacity: A Tutorial 73
Warning: Why Audio-Grade DATs are Bad Backup 74
Tape Libraries: A Tutorial 74

News

HOW MICROSOFT'S AT WORK ARCHITECTURE WILL CHANGE IMAGING 8

First Looks

TEXTBRIDGE'S LOW-COST PERSONAL OCR 11

MINOLTA SPRUCES UP ITS MI³MS DOCUMENT IMAGING SYSTEM 11

ATTO'S SUPER SCSI EXPANDER 12

NCR'S PROCESSIT WORKFLOW 12

Tutorial

BUYING OPTICAL DRIVES: SEEING THROUGH COLORED SPECS 14

Buying an optical drive is hard enough. Misleading specs can lead you astray. Here's what to watch for.

Roundup

FORGET TYPING, START TOUCHING 16

You thought touchscreens were just for cash machines and kiosks? Think again. Non-keyboard devices like tablets and touchscreens speed some repetitive imaging tasks like scanning and workflow routing. How to buy.

Tutorial

HOW TO EDIT VIDEO AT YOUR DESK 38

Video sells. Video teaches. You can now make high-quality professional-looking video with a PC, Mac or Amiga. Here's a step-by-step guide to editing, adding text, animation and special effects. What to buy, How to use it.

DOS DTV Products Sampler:
The FAST Video Machine 44
EMC's PrimeTime DTV 48

Amiga DTV Products Sampler:
Centaur Development's Opal Vision 49
The Disc Company's AlterImage Video F/X 50
Electronic Art's Deluxe Video III 50
Gold Disk Video Director 50
NewTek's Video Toaster 50
Selectra's VuPort 49

Mac DTV Products Sampler:
CoSA's After Effects 51
Macromedia's Authorware Prof 51
Macromedia's Director 51
Passport's Producer 52
VideoFusion 52

July/August 1993 **MBE**

MBE
Minority • Business • Entrepreneur

COMMUNICATION ARTS

PHOTOGRAPHY ANNUAL



34

4 **Speaking as One**—Miami advertising and PR firm Sanchez & Levitan delivers messages all Spanish speakers can relate to.

12 **Wading Through NAFTA**—The debate about creating a continental free trade zone rages on.

20 **The Americas' Dream**—NAFTA promises to open business opportunities across the hemisphere.

24 **Different Drummers**—A student-turned-restaurateur, an accountant-turned-story teller and a woman-owned water products franchise take innovative approaches to doing business.

30 **A Healthy Relationship**—Health care provider Kaiser Permanente is expanding opportunities for minority and women suppliers.

35 **Whose Needs?**—A new bill aimed at improving the fairness of the federal procurement process may actually limit small business participation.

38 **No Double Standards, Please**—Facts, logic and clear thinking disappear when the subject of women in DoT's DBE program arises.

40 **EEI's Decade of Progress**—The Edison Electric Institute celebrates 10 years of minority business development in Atlanta.

GOVERNING

AUGUST 1993 / VOLUME 6 NUMBER 11

TRENDS

20
Putting the Byte Into Crime
By Tod Newcombe
Digitized communications maps and fingerprints are among law enforcement's newest weapons. Can analyzing crime prevent it?

23
The Sports Budget Game
By Charles Mahtesian
In many school districts, threatening to cut high school sports has resulted in an outpouring of community support—including money.

GOVERNING GUIDE

Looking Ahead for Landfills

New federal rules will make 1994 a year of many changes for the nation's 6,000 landfills. Page **59.**



73
SPECIAL TRAVEL SECTION



ON THE COVER: The ongoing search by governments for new tax revenues is the subject of Jeff Seaver's illustration.

FEATURES

26
What's Left to Tax?
By Penelope Lemov
Believe it or not, states still have a lot of revenue capacity, especially in the area of service taxes, that they could tap to relieve their fiscal problems.

33
A User's Guide to Communitarianism
By Rob Gurwitt
There's been a lot of thinking and talking about bringing an ethic of personal responsibility back to American community life. In some places, it's actually happening.

40
The Morning After The Festival
By Charles Mohtesian
Summer festivals are popular, but they're no picnic for local governments that have to eat the costs of providing services. Cities are telling organizers pay up or shut down.

HARD TRUTHS/ TOUGH CHOICES

47 The recommendations of the National Commission on the State and Local Public Service for reforming government for the '90s.

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on reinventing South Carolina

10
Dialogue
Letters from readers and cautionary words from Elsa A. Porter

13
Connections

14
Network



14

80
Management

82
Finance

84
Technology

88
Clinton and the Country
The president's plans for federal involvement in revitalizing cities are unambitious. Could that be the key to success?

WATER
Engineering & Management
Vol 140 No 8

August 1993

FEATURES

Tuscon Water Plant Meets Community Expectations and Tough Quality Limits
Tapping into the Central Arizona Project to guard against depletion of its groundwater supply, Tuscon has built a water plant with some of the latest process technology available **20**

DCS Installation Gives Plantwide Process Control
A Kentucky wastewater plant has run successfully for some time with an advanced distributed control system which provides centralized monitoring and management of all operations **27**

Land Application Requirements of the New Sludge Rules
The standards for sewage sludge use and disposal were based upon public health risk assessment and consideration of the food chain **30**

TRANSPORTATION QUARTERLY

Table of Contents for April 1993

Editorial 149

Pavement, Bridge, Safety and Congestion Management Systems: A Need for Clear Federal Vision 151
WILLIAM A. HYMAN

Total Quality Management for Public Transit Systems 167
ISAAC K. TAKYI, KOFI OBENG AND ISAIAH T. OGORO

Guidelines for Executive Management Information Systems in State DOTs 185
KANI RAO SHETTY, J. MERGINS AND KENNETH MITCHELL

Transportation Management Associations 207
ERIK FERGUSON, CATHERINE ROSS AND MICHAEL MEYER

Selecting and Evaluating Intermodal Stations for Intercity High Speed Ground Transportation 221
J.B. SCHNEIDER

Improving Commuter Air Carrier Safety 247
RICHARD A. PHILLIPS AND WAYNE K. TALLEY

Charting a Course for Intermodal Policy and Research 257
MARK A. TURNQUIST AND GEORGE F. LIST

An Economic Evaluation of the Fee and Fine Structure for Overloaded Trucks in Washington 281
KENT CASAVANT AND JERRY LENZI

Air Quality and Cost-Revenue Impacts of Connector Bus Services for Commuter Rail 295
THOMAS W. MARCHWINSKI AND STEVEN R. FLETANTE

Land Use/Transportation Planning: New Possibilities for Developing and Developed Countries 311
RALPH GAKENHEIMER

Book Reviews

Martin Wachs ..... 337 Wright, *Fast Wheels, Slow Traffic: Urban Transport Choices*

Jeffrey L. Adler ..... 338 Bovy and Stern: *Route Choice: Wayfinding in Transpo Networks*

339 Brief Notes

341 Thanks to Reviewers

I Forthcoming Papers

BETTER ROADS

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOL. 63, NO.
AUGUST 199

FEATURES

USING CONCRETE ON LOW-VOLUME ROADS 17

PROCESSOR CUTS CONCRETE PULVERIZATION TIME IN CALIFORNIA 17

TEXAS IMPROVES SOUND WALLS WITH PRECAST CONCRETE 21

IN-HOUSE PMS KEEPS CHANGING IN WASHINGTON 26

GEOGRID HELPS CONTROL ASPHALT CRACKING 28

A LOOK AT ASPHALT RECYCLING AND RECLAMATION METHODS 31

SNOW EQUIPMENT MAINTENANCE TIPS 35

DRAINAGE DESIGN FOR LOCAL STREETS 36



DEPARTMENTS

READER SERVICE CARD 5

EDITORIAL VIEWPOINT

PUBLISHER'S COMMENTS

LETTERS

NEWS

CATCHING UP ON COMPUTERS 1

PAGAN'S PERSPECTIVE 3

PRODUCTS 3

SUBSCRIPTION CARD 39-4

CATALOGS 4

CLASSIFIED ADVERTISING 4

PROFESSIONAL SERVICES 4

ADVERTISERS' INDEX 4

CALENDAR 4

NEW

METRO Magazine

a bobit publication serving surface mass transportation for 89 years

JULY / AUGUST 1993
VOL. 89 NO. 4

The Newspaper of Information Systems Management
September 6, 1993 Vol. 27 No. 36 Two Pages $4 Copy $48 Year

COMPUTERWORLD

Oracle Office to throw down the gauntlet to Notes

Groupware blueprint adds image, voice to Oracle DBMS



Larry Ellison

IBM Office struggles

Key accounts defect despite new OfficeVision initiatives, products



Looming specter of NT unifying Unix

SEVENTH ANNUAL SPECIAL REPORT ON PC TRENDS

IBM PC Co. wins users; backlog threatens gains



IBM report card



Features

COVER STORY

Airport Shuttle Success Requires Stick-to-itiveness, Marketing Magic
Motorcoaches, transit buses and rail begin many a jet vacation. The motorcoach operator can be successful, but needs to master the market 23

Transit System Changes Fixed Routes To Variation of Demand-Response
Hamilton, OH, has cut mileage 36 percent, made its operation more efficient and increased ridership 26

New Technologies for Rail Power Mean Less Juice, Lower Cost
The increasing sophistication of microelectronics is a major factor in the switch from DC traction to AC propulsion systems 32

Is There a BOB in Your Future?
Battery-operated buses in Tennessee and California spark passenger, transit agency interest. They can be built from the ground up or retrofitted. New technology improves the range and lowers the weight of batteries 38

Zero-Emission Buses Predicted: Traps Called Good for Short Term
L.A.'s Rich Davis copes with nations toughest air standards and runs its third largest transit bus fleet. He is involved with extensive testing of alternative fuels and other emerging technologies 44

OTA Report on Private Buses Urges Tie-Downs, Wide Door, Lift or Ramp
The long-awaited government document on how private motorcoaches should become accessible to the disabled is out, and the private bus industry may never be the same 47

Journal of

Structural Engineering

Volume 119 Number 9 September 1993

TECHNICAL PAPERS

Rigidities of Horizontally Curved Flat Structures
Alaa Aly and John B. Kennedy 2513

Robust Active Optimal Control Scheme Including Soil-Structure Interaction
S. M. Shahid Alam and Shunsuke Baba 2533

Hybrid Plane Quadrilateral Element with Corner Rotations
Kam-Yim Sze and Amin Ghali 2552

Cyclic Behavior of Moderately Deep HSC Beams
I-Kuang Fang, Shih-Tzung Yen, Chwen-Shyuan Wang, and Keh-Luen Hong 2573

Time Analysis of Partially Prestressed Beam Subjected to Changing Loads
L. J. Xin and R. I. Gilbert 2593

Web-Flange Interaction in Cold-Formed Steel Z-Section Columns
D. Polyzois and P. Charnvarnichborikarn 2607

Reliability of Wood Structural Systems
William M. Bulleit, David V. Rosowsky, Kenneth J. Fridley, and Marvin E. Criswell 2629

Efficiency of Vibrational Energy Dissipation by Moving Shot
C. Cempel and G. Lotz 2642

Rating and Preliminary Analysis of Suspension Bridges
Carl C. Ulstrup 2653

Analysis of Beams Prestressed with Unbonded Internal or External Tendons
F. M. Alkhairi and A. E. Naaman 2680

Coating Delamination by Radial Tension in Prestressed Concrete Pipe I Experiments
Mehdi S. Zarghamee, Rasko P. Ojdrovic, and William R. Dana 2701

Coating Delamination by Radial Tension in Prestressed Concrete Pipe II Analysis
Mehdi S. Zarghamee, Rasko P. Ojdrovic, and William R. Dana 2720

Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches
Amir Mirmiran and Amde M. Amde 2733

Behavior of Chemically Bonded Anchors
Ronald A. Cook 2744

Object-Oriented Finite Element Analysis Using EER Model
G. Yu and H. Adeli 2763

TECHNICAL NOTE

Optimum Design of Unstiffened Built-Up Girders
Tam Ha 2784

DISCUSSIONS

Estimating Uplift Capacity of Light Steel Roof System. Roger A. La Boube
By Robert W. Dannemann. Closure by author 2794

Geometrical Imperfections on Inelastic Frame Behavior. Eric M. Lui
By Jostein Hellesland. Closure by author 2795

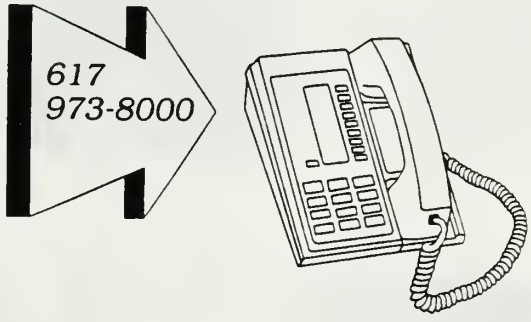
Approximating Lateral Stiffness of Stories in Elastic Frames. Arturo E. Schultz
By Dionisio Bernal. By Y. S. Lau, T. S. Lok, and A. R. Freeman. Closure by author 2800

Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges. Koei Takena, Chitoshi Miki, Hirosuke Shimokawa, and Kenji Sakamoto
By P. C. Papanikolas and Geoffrey L. Kulak. Closure by authors 2807

ERRATA 2812

HAVE A QUESTION?

THE ANSWER COULD BE AS CLOSE AS YOUR TELEPHONE



CALL THE TRANSPORTATION LIBRARY

AND SEE HOW WE CAN HELP MEET YOUR INFORMATION NEEDS

TRANSPORTATION JOURNAL

CONTENTS

SUMMER 1993 / VOL. 32 / No. 4

ARTICLES *Page*

An Information System for Simultaneous Consolidation of Inbound and Outbound Shipments
JAMES H. BOOKBINDER
CAROLYN J. BARKHOUSE 5

Customer-Focused Strategies for Motor Carriers
DOUGLAS M. LAMBERT
M. CHRISTINE LEWIS
JAMES R. STOCK 21

Logistics Optimizing and Operational Plans and Systems and Their Role in the Achievement of Corporate Goals
ROBERT A. NOVACK
STEVEN C. DUNN
RICHARD R. YOUNG 29

Liberalization of Market Entry for Norwegian Regional Airlines
JOHANNA LUDVIGSEN 41

Determinants of Strategic Change in the LTL Motor Carrier Industry: A Discrete Choice Analysis
CURTIS M. GRIMM
THOMAS M. CORSI
RAYMOND D. SMITH 56

Institute of Transportation Engineers

ITE JOURNA

Volume 63, Numbe
August 1

Contents

Articles

9 **Urban Transport and Sustainable Development in The Netherlands**
By Peter M.W. Elsenaar and Jeroen A. Fanoy
Dutch authorities have created a plan designed to reduce mobility and combat the growing problem of congestion, pollution and traffic accidents

14 **International President's Message and Constitution Amendments**
ITE members are encouraged to review and comment on proposed amendments to the Institute's Constitution. A response form is provided as a pull-out

18 **Rumble Strips and Pedestrian Safety**
By Michael J. Cynecki, James W. Sparks and Jenny L. Grote
A study in Phoenix indicates that advance rumble strips are not a helpful safety device based on speed data and pedestrian accident experience.

26 **The 10 Major Pitfalls of Coordinated Signal Timing**
By Jeffrey W. Buckholz
To successfully develop and implement coordinated timings, transportation professionals must avoid some common pitfalls

31 **The Metric System Impacts U.S. Highways**
By Jay K. Lindly and Daniel S. Turner
The United States is one of only three countries in the world not converted to the metric system. Through plans developed by the Department of Transportation, Federal Highway Administration, Department of Commerce and other agencies, the country plans to make the switch by 1996.

37 **Should Vehicle 15-Percentile Speed be Used in Railroad Grade Crossing Design?**
By Said M. Easa
A case study addressing the sight distances required along the highway and the railroad for an approaching vehicle involving approach vehicle speed, shows that using the 15-percentile speed is useful in some cases but not in all.

News

6 **Washington Report**
ITE Urges Congress to Ful Fund ISTEA • House and Senate Disagree on Conformity • New Call for Congestion Pricing Project

Departments

4 **Calendar**
5 **To the Editor**
47 **People and the Profession**
48 **Elections to the Grade of Fellow**
49 **Professional Services Directory**
59 **Positions**
62 **Advertisers Index**

Transportation Research

Volume 27A, No. 4, July 1993 **Part A: Policy and Practice**

Contents

Gerard Claisse and Frantz Rowe 277 Domestic telephone habits and daily mobility

Ali Modarres 291 Evaluating employer-based transportation demand management programs

Dean W. Hestermann, Joseph F. DiMento, Dru van Hengel and Brenda Nordenstam 299 Impacts of a consent decree on "The last urban freeway": Interstate 105 in Los Angeles County

Steven Stern 315 A disaggregate discrete choice model of transportation demand by elderly and disabled people in rural Virginia

Sock-Yong Phang 329 Singapore's motor vehicle policy: Review of recent changes and a suggested alternative

Institute of Transportation Engineers

ITE JOURN

Volume 63, Numb
September

Contents

Articles

13 **Post-Calibration Adjustment of Travel Demand Models**
By Anthony A. Saka
It is necessary to adjust travel demand models to reflect socioeconomic changes and community growth and expansion

19 **A Recommended Practice: Guidelines for Residential Street Design**
By ITE Technical Council Committee 5A-25A
This is a summary of the recommended practice, which updates the recommended practice approved by the Institute in February 1993.

21 **Demand Management Implementation in Southeast Asia**
By Yordphol Tanaboriboon
Attempts to alleviate severe traffic congestion in Southeast Asia have so far been inadequate. Both successes and failures are demonstrated in a comparison of demand management techniques in Singapore and Bangkok

31 **Capacities of Multiple Left-Turn Lanes**
By ITE Technical Council Committee 5P-5
This is a summary describing the results of a study of the capacities of multiple left-turn lanes and the roadway geometric features that influence the capacity of such facilities

33 **Establishing Successful Career Guidance and Student Chapter Programs**
By Nazir Lalani and Maria Laura Musso-Escude
The Institute's District 6 and the student chapter at the University of Washington have implemented successful programs and activities for career guidance and student involvement in the transportation profession.

38 **Overhead Infrared Vehicle Sensor for Traffic Control**
By Tarik M. Hussain, Tarek N. Saadawi and Samir A. Ahmed
This article describes the development, design and experimental testing of a new system using laser technology for vehicle detection

News

11 **ITE News**
Harold F. Hammond Scholarship • Transportati Management Conference

12 **Washington Report**
2.5 Cent Gas Tax to Trust Fund • Appropriations Fig in House • EPA Updates Guidelines on Models • PI Program • Eisenhower Interstate System

Departments

4 **Calendar**
6 **To the Editor**
46 **Research Bulletin**
48 **Professional Services Directory**
55 **Positions**
62 **Advertisers Index**

WORKING WOMAN

CONTENTS



38 RN Burns Empowered At Beth Israel



34 The Inner Workings of Office Politics

FEATURES

A WOMAN OF INFLUENCE
Low-key and high-powered, CEA chief Laura Tyson has Clinton's ear—and the attention of all the Washington insiders who have underestimated her. *By Susan Dentzer*
Plus: Living With Laura Tyson. *By Erik Tarloff* 30

HOW TO WIN ALLIES AND INFLUENCE SNAKES
Office politics in the nicer '90s.
By Susan M. Barbieri 34

WHEN WORKERS RUN THE SHOW
It's an idea that makes most bosses squirm, but letting people manage themselves can raise quality and boost a company's bottom line
By David Holzman 38

MY LIFE AS A MAN
Women (and men) speculate on how their lives in the office—and their opportunities for success—would change if they suddenly switched sexes
By Lynn Snowden 42

BEAUTY: MAGNIFICENT (MAKEUP) OBSESSIONS
A woman who can tell Sugared Maple from Sherry Lipshine isn't at the mercy of cosmetics. She's the master of them. *By Lesley Dormen*
Plus: The Business of Beauty 46

WEEKENDS

THE CALL OF THE WILD
A vacation on the edge of civilization may bring you back to life. *By Pam Houston* 52

THE NEW SPORTS SPAS
Fitness vacations that turn the great outdoors into a gym without walls. *By Rona Berg* 54

GOING PLACES
Seven women tell tales of their own true adventures. *By Francine Hermelin* 56

DEPARTMENTS

LETTER FROM THE EDITOR 4

LETTERS 6

BUSINESS BUZZ
When You Learn You're Underpaid, Instant Networking for CEOs, Values For Sale or For Real?, and more 9

CAREER STRATEGIES
Is Your Title Better Than Your Job? How to get power with a promotion
By Dr. Adele Scheele 12

HOW I DID IT
Managing in a Disaster: Linda Isenhour of BellSouth on leading the troops through the eye of the storm 15

YOUR MONEY
Why Every Woman Needs a Will
By Lynn Brenner 18

TECH TALK
Multimedia Magic: Whizz-Bang Accounting, Ergonomics for Mice, and more 22

ENTREPRENEURIAL EDGE
When to Give Up—Or Not. Reading the writing on the wall before it's too late
By Lyle Crowley 25

HOTLINE
How to Worry Constructively; Healthy Uses for Sick Leave, Fragrance: The New Muzak?, and more 29

OUT BOX
The Imperfectly Admirable Hillary
By Gail Collins 76



25 C.J. Matthias Reconceived Mothers Work

CONTENTS

FEATURES



41 THE WORKING WOMAN'S REVOLUTION: STAGE TWO

42 THRIVING IN CHAOS
Corporate America is literally falling apart—and that's good, says the nation's top management guru.
By Tom Peters

45 RECLAIMING OUR EDGE
In global competition, America's edge will not come from an industry, a management technique or a political strategy, says the Secretary of Labor. It will depend on people • ***By Robert B. Reich***

50 YOU ARE YOUR OWN BUSINESS
In the new labor market, we will all be skill merchants. Here's how to identify the tools you need to sell yourself over and over again.
By Stephen M. Pollan and Mark Levine



52 MAKING ELVIS PAY
After all the King's men had squandered his fortune, Priscilla Presley took control—and turned her ex into a very private, very profitable empire. • ***By Suzanne Andrews***

58 IS FINANCIAL ADVICE SEXIST?
What happens when you send one man and one woman—with identical incomes, goals and amounts to invest—to 32 brokers and bankers? You'd be surprised. • ***By Katherine and Richard Greene***

HEALTH

82 WRITING YOUR OWN PRESCRIPTION
The Pill may soon go OTC. The question is, will it improve women's health care—or hurt it? • ***By Winifred Conkling***

LIVING

88 FASHION Translating the Trends
We tailor four looks and put them to work
92 DESIGN Sex Objects: A new exhibit shows how women have shaped the tools of home and office
4 BUYER'S GUIDE Stair Climbers
7 BEAUTY Fragrance Wars



92

DEPARTMENTS

8 EDITOR'S LETTER

11 SIZ SUZZ
How to Hire the Perfect Strenger: Anita Hill: Still Controversial; The Bottom Line on Pantyhose Ads; Trendicetors; and more.

23 MANAGING
Reorganizing the Organization Chart • ***By Nancy K. Austin***
31 Plus: How I Did It: Xerox's Laura Meier and Lori Meagher on splitting a job

35 YOUR MONEY
Love the Product? Buy the Stock: Use your insider's edge to pick ten-baggers.
By Clint Willis
39 Plus: Need a Loan? Try the Office



99 CAREER STRATEGIES
Living Up to Great Expectations
By Dr. Adele Scheele
73 Plus: Finding the Right Words: Breaking Bed News to Your Boss • ***By Stephen M. Pollan and Mark Levine***

75 SMALL BUSINESS
Growing a Company by Taking It Public • ***By Jill Rachlin***
78 Plus: Small Business Solutions
By Jane Applegate

80 TECH TALK
On-Line Gold Mines. Why don't more women tap into the latest business data, news and gossip? • ***By Judith Broadhurst***

109 OUT-BOX
Taking the Rap, Reno Style
By Gail Collins

GIS WORLD

VOL 6 NO 8 *The World's Leading Geographic Information Systems Publication* AUGUST 1993

COLUMNS

16 **GIS Washington**
Data Management Analysis Critical to National Biological Survey
By Harvey Fleet

18 **GIS in Local Government**
Street Centerline Project Spurs GIS Support
By Michael Cully

20 **Beyond Mapping**
GIS Maps Are Dumb
By Joseph K Berry

22 **Nuts and Bolts**
Wide Area Information Servers Provide a Wealth of Information
By Eric J Strand

26 **The "G" in GIS**
Can the GIS Community Deal with a Geoid's Mathematical Complexity?
By Norman T Olsen

30 **GIS Canada**
GIS Supports Organizational Restructuring and Downsizing
By Fred Kolls

58 **Remote Sensing**
Earth Observing System Suffers Budget Cuts
By Richard S Driscoll

60 **GIS Strategies for Utilities**
PC-Based Tools Play Role in Evolving AM FM GIS Market
By Stan P Weber

62 **Software Notes**
TIGER Massage Expands TIGER File Functionality
By Peter Van Demark

64 **Edge Nodes**
GIS Paradigms Lost
By Nigel Waters

86 **The Last Word ...**
The National GeoData Policy Forum — What's Next?
By H Dennison Parker

FEATURES

34 **To Save a Species: GIS for Manatee Research and Management** *By Leslie J Ward and Brad Weigle*

38 **Wastewater Management Project Provides Timely Revenue** *By Linus Smith*

42 **African Wildlife Management Challenges GIS** *By Roman Pryjomko*

48 **Standards Offer LIS/GIS Support** *By Steve Ventura*

52 **GIS Enhances Water Quality Modeling** *By Hanadi S. Rifai, Charles J Newell and Philip B Bedient*

56 **Numerical Game Offers New Vector-to-Raster Conversion Approach** *By Wang Zheng, Ren Fuhu and Vernon Shanholtz*

GIS NewsLink

9 NAVFAC CAD2 Delayed Again
9 GeoVision/USA Files Chapter 11
9 WorldView Imaging Forms Partnership
9 Landsat 6 Ready to Launch
10 Autodesk Announces ANAHEIM Technology
10 GPS Task Force Established
10 Transportation Use of GIS Growing
11 BOGI Deadline Approaches
11 *Remote Sensing Reviews* Introduces New Format
11 Digital Nautical Chart Underway
11 Technology Reinvestment Project Solicits Proposals
12 Windows NT Applications Abundant
12 United States Seeks Remote Sensing Strategy Plan
12 Continental Airlines to Use GPS

GIS Conference Connection

14 GIS ISPRS 1994 Planned
14 Eurocarto XI Announced
14 Dates Set for GIS in Business '94 Shows
14 Environmental Change Symposium Held
14 ERDAS Users Group Plans Meeting
15 Hawaii Conference to Feature GIS Minitrack
15 AM FM '94 Theme Announced
15 GIS LIS '93 • Humans Breaks New Ground
15 GIS '94 Scheduled in Vancouver

GIS WORLD

VOL 6 NO 9 *The World's Leading Geographic Information Systems Publication* SEPTEMBER 1993

FEATURES

30 **In Search of the Optimal Utility Data Conversion Team** *By Karen Ingersoll*

34 **Quality Assurance Procedures Vital to Conversion Projects** *By Patrick J Gaertner*

37 **GIS Facilitates Regional Recycling Efforts** *By Dale O Himes and Mike Fadhl*

40 **Update Your Database — The North American Continent Has Moved** *By Norman T Olsen*

42 **LIS/GIS Standards an Industry Challenge** *By Steve Ventura*

48 **Follow a Seven-Step Path to GIS Nirvana** *By Andrew W Flagg*

50 **GIS Eases Resource Management Efforts** *By Richard Troeger*

53 **Roadblocks Confront GIS in Latin America** *By Emilio Chuvieco and Olga Viedma*

54 **Conservation Commitment Renewed with Protected Area Systems** *By Celso R Roque*

GIS NewsLink

9 System 9 Sold to Unisys
9 GeoVision Hearing Held
9 SPOT 3 Launched
9 TYDAC Announces Restructuring
10 GISAK Founded
10 Census Bureau Releases New TIGER File
10 Psomas Continues to Help Rebuild Los Angeles
10 EDS Sells GIS Division
10 California GIS Task Force Report Released
11 First Common UNIX Specification Released
11 Global Sea Level Changes Shown
11 Biological Applications to Double in Five Years
11 URISA Book on Marketing Government GIS Announced

GIS Conference Connection

14 FGT '93 Steering Committee Announced
14 1993 Surveying and Mapping Conference a Success
14 GPS GIS '93 Includes Training Program
15 Etak User Group Conference to Mark Anniversary
15 D C Global Change Conference Slated
15 Asia Geographic Technology Conference Set
15 AURISA '93 Focuses on Business Solutions
15 NAV '93 Looks at Navigation Systems
15 T&D Conferences Announced

COLUMNS

18 **GIS Washington**
The National Spatial Data Infrastructure Is a National Resource
By Louis G Hecht Jr

20 **The "G" in GIS**
Consider Both Sides of GIS Ethics
By Jerome E Dobson

22 **Nuts and Bolts**
Digesting the DIGEST Data Exchange Standard
By Eric J Strand

26 **Beyond Mapping**
Terminology Accelerates Your Intellectual Depletion Allowance
By Joseph K Berry

28 **GIS Canada**
ISTC Releases *Geomatics Industry Review*
By David Coleman

58 **Innovation Watch**
The Future Is Now
By David Forrest

60 **Software Notes**
MapBox Finds Niche in Map Analysis
By John C Cartwright

62 **GIS Strategies for Utilities**
Telco Field Engineers Outside Plant Automation Loop
By Eric L Knouse

64 **Edge Nodes**
The GIS Environmental Consultant: Hired Gun or Impartial Scientist
By Nigel Waters

86 **The Last Word ...**
Where in the GIS Chasm Are We?
By H Dennison Parker

CONTENTS

JOURNAL OF THE AMERICAN PLANNING ASSOCIATION
Summer 1993
Volume 59 • Number 3

ARTICLES

**The Evolving Metropolis:
Studies of Community, Neighborhood, and Street Form at the Urban Edge** 271
Michael Southworth and Peter M. Owens

**Subservient Suburbia:
The Reliance of Large Suburban Companies on Central City Firms for Financial and Professional Services** 288
Alex Schwartz

A Survey and Assessment of Housing Trust Funds in the United States 306
Charles E. Connerly

Toward a Sunbelt Urban Design Manifesto 320
Marc Fink

**Planning as a Rhetorical Activity:
Survey Research as a Trope in Arguments About Electric Power Planning in Chicago** 334
James A. Throgmorton

DEPARTMENTS

THE LONGER VIEW
**Can Clinton Save Our Cities?
What the Federal Government Should Do** 267
Robert F. Wagner, Jr., and Julia Vitullo-Martin

COMMENTARY AND COUNTERPOINT
**Market Planning:
Oxymoron or Common Sense?** 347
Harry W. Richardson and Peter Gordon
Market Planning, Market Planners, and Planned Markets 353
Tridib Banerjee

PLANNER'S NOTEBOOK
**Pedestrianization Strategies for Downtown Planners
Skywalks Versus Pedestrian Malls** 361
Kent A. Robertson

Journal of

Structural Engineering

Volume 119 Number 8 August 1993

TECHNICAL PAPERS

Tests of Profiled Steel Decks with V-Stiffeners
Erik Stefan Bernard, Russell Q. Bridge, and Gregory J. Hancock 2277

Shear Strength of Reinforced Concrete Deep Beams
Wei Wang, Da-Hua Jiang, and Cheng-Tzu Thomas Hsu 2294

Thermal Actions for Concrete Bridge Design
Fernando A. Branco and Pedro A. Mendes 2313

Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks
George Warren and L. Javier Malvar 2332

Design of Cold-Formed Stainless Steel Tubular Members I: Columns
K. J. R. Rasmussen and G. J. Hancock 2349

Design of Cold-Formed Stainless Steel Tubular Members II: Beams
K. J. R. Rasmussen and G. J. Hancock 2368

Impact Studies of Multigirder Concrete Bridges
Dongzhou Huang, Ton-Lo Wang, and Mohsen Shahawy 2387

Dynamic Analysis of Active-Control Cable-Stayed Guideway
David V. Hutton 2403

Behavior and Design of Steel Single Plate Shear Connections
Abolhassan Astaneh-Asl, Kurt M. McMullin, and Steven M. Call 2421

Fatigue Reliability under Nonstationary Loads: Model Application
Richard J. Nielsen and Xiqin Long 2441

Seismic Responses of Two Adjacent Buildings: I: Data and Analyses
Mehmet Çelebi 2461

Seismic Responses of Two Adjacent Buildings: II: Interaction
Mehmet Çelebi 2477

DISCUSSIONS

Discrete Optimization of Structures Using Genetic Algorithms, S. Rajeev and C. S. Krishnamoorthy
**By Laurence Schmid.
Closure by authors** 2494

AASHTO Seismic Isolation Design Requirements for Highway Bridges, Ronald L. Mayes, Ian G. Buckle, Trevor E. Kelly, and Lindsay R. Jones
**By H. B. Day and G. S. Stranaghan. By Kalyan K. Sarkar.
Closure by authors** 2496

Cable-Stayed Bridge Vibration due to Road Surface Roughness, Ton-Lo Wang and Dongzhou Huang
By Kuang Han Chu. Closure by authors 2502

Extraordinary Live Load in Office Buildings, Edmund C. C. Choi
By Claudio Floris 2505

An Event-to-Event Strategy for Nonlinear Analysis of Truss Structures, I. A. Karamchandani and C. A. Cornell
By Erling Murtha-Smith. Closure by authors 2506

Structural Seismic Damper, Manuel Aguirre and A. Roberto Sanchez
**By Ian D. Aiken, James M. Kelly, and Eduardo Miranda.
Closure by authors** 2509

Journal of

Transportation Engineering

Volume 119 Number 5 September/October 1993

EDITORIAL 665

TECHNICAL PAPERS

Assessing Potential for Superhub Airport for California
Terry A. Ruhl, Manuel Romana, Robson F. Ramos, and Christopher Spidle 667

Distributed Air-Traffic Control. I: Theoretical Studies
Nicholas V. Findler and Ron Lo 681

Distributed Air-Traffic Control. II: Explorations in Test Bed
Nicholas V. Findler and Ron Lo 693

Risk and Capacity Impacts of ATC Separation Rules
John A. Stewart and John H. Shortreed 705

Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions
P. R. Stopher 723

Risk-Based Bridge Management
M. Cesare, J. C. Santamarina, C. J. Turkstra, and E. Vanmarcke 742

Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes
Parviz A. Koushki, Louis F. Cohn, and Abdurrahman A. Felimban 751

Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints
Chidambaram Channakeshava, Fariborz Barzegar, and George Z. Voyiadjis 763

DISCUSSIONS

Field Test of 72-in. Diameter Cast-in-Place Nonreinforced Concrete Pipe, Curtiss W. Gilley, Lester H. Gabriel, and Robert S. Stanley
**By Morgan Johnson. By Robert C. Prevost.
Closure by authors** 784

Identification of Inappropriate Driving Behaviors, John M. Mason Jr., Kay Fitzpatrick, Deborah L. Seneca, and Thomas B. Davinroy
By Kenneth Todd. Closure by John M. Mason Jr. and Kay Fitzpatrick 790

The American Management Association Magazine

AUGUST 1993

Management Review



COVER STORY:

9 LABOR

Will Unions Survive?

Union membership and influence in the '90s are a mere shadow of what they once were. Do America's labor organizations have the ability to make a comeback and be visible into the next century?



FEATURES

25 CASE STUDY

Can IBM Soften the Blow? IBM's latest human resources program is providing outplacement for its "surplused" employees in the Hudson Valley—one of the areas hardest hit when Big Blue downsized. How well are ex-"beemers" faring?

30 TRADE

Trading Places: Barter Re-enters Corporate America Companies are rediscovering one of the oldest forms of exchange—bartering. The scale today, however, is tremendous: Last year American companies bartered an estimated $6.5 billion worth of goods and services.

35 RECRUITMENT

Hiring the Overqualified The resumes come pouring in when you're looking to fill an opening. In today's recessionary market, however many of the applicants are overqualified. What are the pros and cons of hiring an employee whose experience far exceeds your needs?



DEPARTMENTS

1 EDITOR'S NOTE

The Pentagon's long-overdue decision to allow women to fly combat missions has some interesting parallels to the diversity issues facing corporate America.

4 MEMO FOR MEMBERS

Unions and business can work together to train their workforces, thereby creating a new kind of job security.

5 FRONT LINES

Stress and the working women....Few can afford to take advantage of the Family and Medical Leave Act....Yes, there is good economic news for the state of Virginia....Unemployed executives consider switching careers....A bright idea to cut down on office energy use.

6 LETTERS

16 FACE TO FACE

Ronald Carey, head of the International Brotherhood of Teamsters, ran on a reform ticket in 1991 that promised to "say goodbye to the Mafia." Here's what he has to say about the future of the organized labor movement.

20 CUTTING EDGE

Lessons from the Rodney King tape: By breaking the videotape down frame by frame and replaying it over and over again during the trial, the defense was able to desensitize the jury to what was really happening. Companies could learn something here. When the minutia is overscrutinized, managers tend to lose sight of the larger picture.

39 MEMBER'S UPDATE

What's new on AMA's roster of events and new training products.

40 MEMBER'S SPOTLIGHT

AMA member James Cicarelli offers a system for good management.

41 DC PERSPECTIVE

Labor Secretary Robert Reich's proposal for a strong economy is an interesting dichotomy: He proposes a strong labor movement combined with a strong business environment.

45 LEGAL BRIEFS

What every company needs to know to comply with the Family and Medical Leave Act, which goes into effect this month.

48 LIGHTER SIDE

Lamenting the retail store's "no return" policy.

The American Management Association Magazine

SEPTEMBER 1993

Management Review



COVER STORY:
10 EDUCATION
A Business Plan for Education

Savvy firms are doing more than bemoaning the lack of well-educated employees. By teaming up with schools and educators, these companies are taking a proactive approach to healing our nation's education crisis.



FEATURES

20 BENCHMARKING
Lost in Space: Typical Benchmarking Problems Recognizing the gap between your business's operations and world-class performance is only half the battle. The real challenge is in determining how to bridge that gap.

23 PUBLIC RELATIONS
Why Wall Street Matters Too many companies ignore the financial world unless it directly affects them. But a good investor relations program can provide big benefits for your company. Here's how.

27 FINANCE
Budgeting: From Pain To Power The annual budget is what actualizes a company's objectives and strategies. So why do most managers consider budgeting to be a hateful task, one they often leave to the very last minute? Here, learn to turn budgeting into a powerful tool that will lead to better business performance.

41 CULTURE
Corporate Madness: Curing Your Company Left untreated, a severely depressed company can go into a downward spiral. Unless it is cured, its competitors will mercilessly kill it off. Fortunately, there is something that can be done.



45 TRAINING
Operation Enterprise: Training Tomorrow's Workers AMA's summer program for high school and college students gives future hires a leg up in the business world by providing students with mentors and true-to-life business experiences.

54 CASE STUDY
The Evolution of Pinkerton
At 140 years old, this old-time security firm has learned how to keep up with the changing times and changing technology

DEPARTMENTS

1 EDITOR'S NOTE
The business community and educators have much to learn from each other. Once they do, they will be in a better position to help our nation's children.

4 MEMO FOR MEMBERS
All the management gurus expounding new management theories offer no magical solutions. These principles have been around for years—they're the tried-and-true business guidelines that have always worked.

5 FRONT LINES
L.A. commuters are willing to ride-share to help cut down on pollution....Experts predict that soon employees will have the burden of planning their pension funds....Business sees the growth of outdoor experiential training programs....Few employees take advantage of their companies' family-leave programs....Yes, it's now kosher to fax your resume.

8 LETTERS

17 DC PERSPECTIVE
President Clinton's education package has set some lofty goals to reach by 2000. The question, however, is whether he's taken the right tack to achieve them.

33 CUTTING EDGE
The profiles of three unconventional professionals may offer a glimpse of the worker of the future.

36 IN PRACTICE
By taking the office away from your employees, you may discover savings you hadn't dreamed of—and more productive employees to boot. Here's how three companies created "road warriors" out of their salesforce.

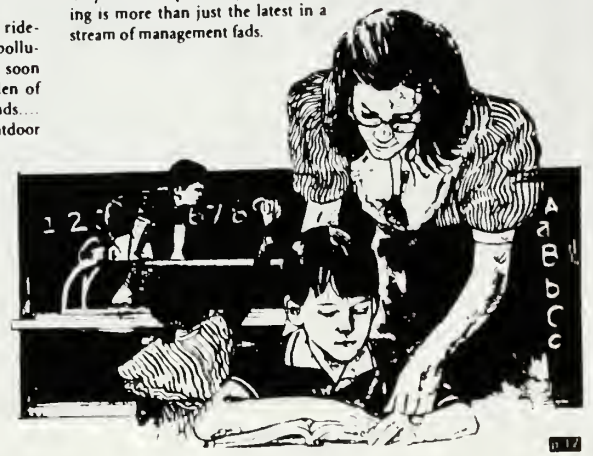
51 FACE TO FACE
Michael Hammer and James Champy, two MIT-trained management gurus and authors of *Reengineering the Corporation*, explain why reengineering is more than just the latest in a stream of management fads.

60 MEMBER'S SPOTLIGHT
The effective management of organizations relies not on magic silver bullets, but on old-fashioned business values.

61 MEMBER'S UPDATE
What's new and upcoming for AMA members.

62 LEGAL BRIEFS
How safe is your intellectual property? If you don't know, you risk losing it.

64 LIGHTER SIDE
If we work on it, the art of doing nothing can be more prestigious than anything we possibly might do.



CIVIL ENGINEERING
SEPTEMBER 1993 VOLUME 63 NUMBER 9

SPECIAL ISSUE: REHABILITATION

FEATURES

TRAVERSING THE TERMINALS New automated-people-mover systems are helping passengers get around increasingly hectic major airports *By Teresa Austin* 40

HASSLE-FREE BRIDGE REHAB Engineers invoked whatever was necessary to keep Cleveland's Main Avenue Bridge rehabilitation moving along *By Charles A. Baumgartner and Kenneth D. Ishmael* 44

DRILLING WITH DIRECTION A pipe construction project in Norfolk, Va. set a world's record—but not without a struggle. *By W. Douglas Ensor, Peter S. Fortin and Everett P. Skipper* 48

ALL DRESSED UP A building in congested midtown Manhattan is being renovated inside and out—and underneath—to house offices and retail space for clothier Barneys New York *By Dennis Joseph* 52

SPEEDY BACKFILLING FOR OLD MINES Pneumatic equipment can help fill the underground voids left by thousands of abandoned coal mines *By Robert C. Dyni and Mackenzie Burnett* 56

TRENCHLESS TRACK RECORD Imagine a decade's worth of data on no-dig sewer projects synthesized into a catalog. Consider it done *By Larry O'Keefe and Martin Phillips* 59

IN SEARCH OF BETTER LOAD RATINGS Nondestructive testing can help engineers zero in on more accurate load ratings for bridges, lock gates and other infrastructure *By Jeffrey L. Schulz* 62

PIN PILES SAVE SILOS A deteriorated timber foundation for a West Coast grain-export facility was replaced with 840 pin piles—without interrupting operations *By Paul B. Groneck, Donald A. Bruce, James H. Greenman and George Bingham* 66

HAUNTED BY THE PAST Keeping history from tragically repeating itself was the mission of safety engineers on Kansas City, Mo.'s recently completed Trans-Missouri Tunnel. *By Victoria Frencks and David F. Egger* 69

GIS AND STORM-WATER MANAGEMENT A geographic information system can save time and money in preparing a storm-water permit, but pitfalls abound, as engineers discovered in Anchorage, Alaska *By Mark Pearson and Scott Wheaton* 72

CIVIL ENGINEERING
AUGUST 1993 VOLUME 63 NUMBER 8

SPECIAL ISSUE: MATERIALS

FEATURES

STEEL EXOSKELETON DEFINES ARCHITECTURE An exposed steel frame highlights a luxury hotel and apartment tower in Barcelona, Spain *By Hal Iyengar, John Zils and Robert Sinn* 4

RCC: REHAB RESULTS Thirty U.S. dams have been modified successfully with roller-compacted concrete *By Francis G. McLean and Kenneth D. Hansen* 4

DETECTING LEAKS IN GEOMEMBRANES An electrical method can locate leaks in liners at new landfills and surface impoundments *By Doren L. Laine and Glenn T. Darilek* 5

PLASTIC POTENTIAL Fiber-reinforced plastic could be the material of the future for protecting concrete infrastructure. *By Paul Tarricone* 6

BONDED TENDON DEBATE Are bonded tendons—currently banned in bridge construction in the U.K. because of corrosion concerns—getting a bum rap? *By Morris Schupack* 64

THE PROOF IS IN THE PAVEMENT End-result specifications are helping change the old attitude of "close enough for highway work." *By Richard M. Weed* 67

TAKING THE PAIN OUT OF THE PUNCH LIST Total quality management can reduce the size of the punch list by improving the quality of the building from the very start. *By Mark A. Boyle* 70

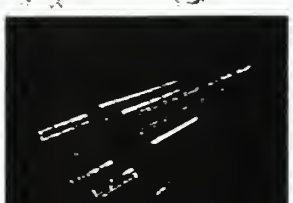
ASCE CONVENTION SPECIAL: DALLAS-AREA PROJECTS

BUILDING THE SSC: A TEXAS-SIZED CHALLENGE The politically embattled megaproject is a showcase for underground design and construction innovations *By John Preadergast* 54

DART'S ASAP EIS Extensive planning by the Dallas Area Rapid Transit Authority expedited a project's environmental impact statement. *By Douglas A. Allen and William Kyle Keahey* 58

MassTransit

JULY/AUGUST



Facilities is this issue's theme: stations and shelters. Also, Facilities Management with a look at Capital Asset Management, Maintenance Lifts, and Fare Collection and Distribution.

FACILITIES
20 *Capital Asset Management As A Tool*
by Peter Cap and Gary M. Hoffman
Capital asset management not only helps you get organized, but it provides information essential to funding.

44 *Design Moves Toward Passenger Friendly Facilities*
by L.E. Peter Floyd
Transit authorities are creating lighter, brighter, safer, more secure, comfortable and convenient environs for passengers.

STATIONS
24 *Improvement Project For Penn Station*
by Kenneth Standig
New York City's Pennsylvania Station, home to the largest commuter rail line in the U.S., is undergoing an extensive construction project to improve passenger movements and physical plant facilities.

FARES
30 *Fare Distribution Moves Into the Next Century*
by Tom Franklin
An alternative to traditional fare distribution is handling, processing, and accounting by electronic means.

34 *The New Fare Collector Systems*
compiled by staff
A ticketing system now operates as a ticket agent, an accountant, and security guard in one.

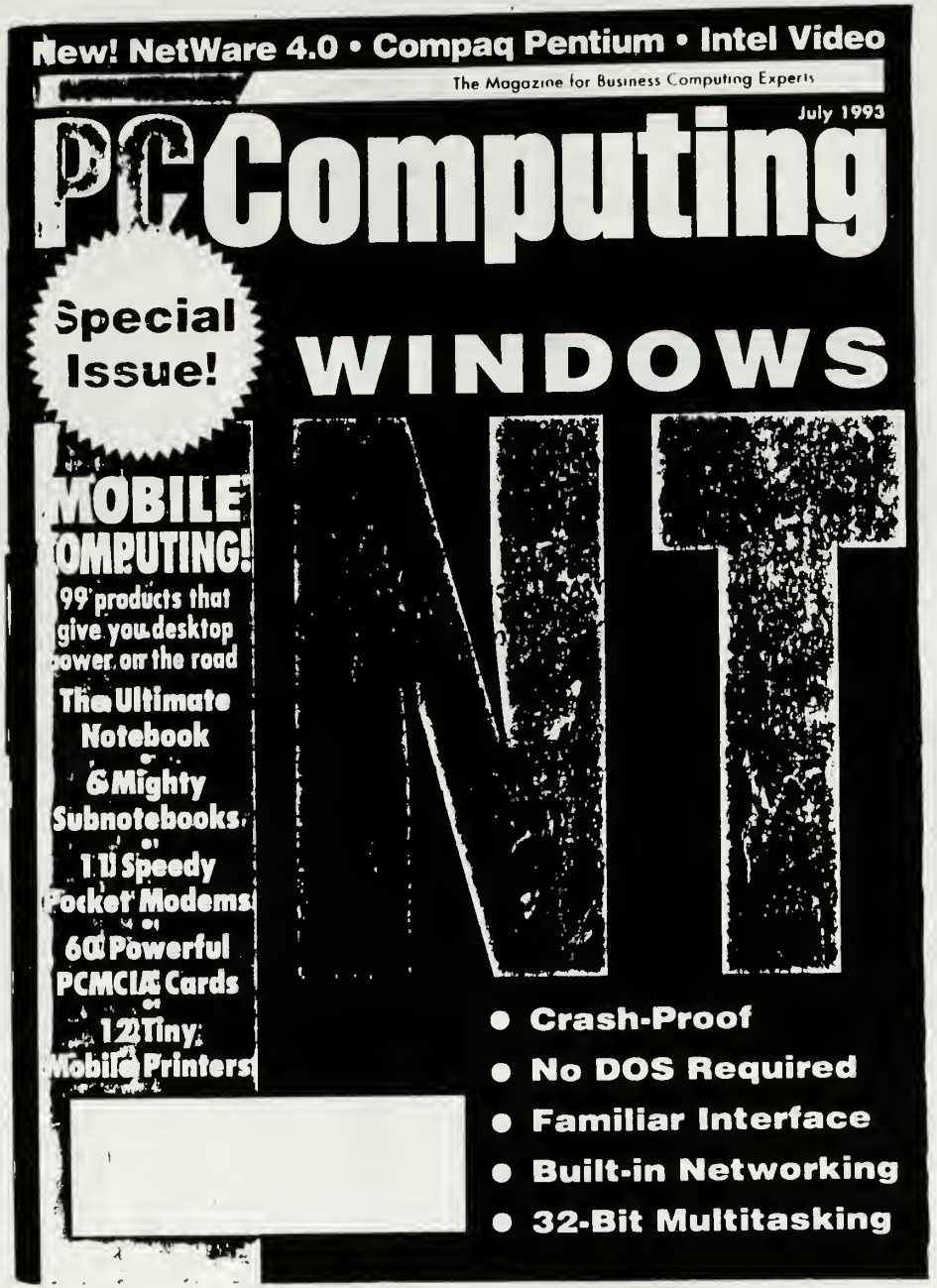
SHELTERS
39 *Pre-Fab Shelters Made to Order*
by Heidi Tolliver
Shelters, custom-made and assembled in the factory, can be configured to fit any need.

SHOWCASE
48 *Expo Product Preview*
compiled by staff
A sneak peek at the latest and the greatest to be seen on the show floor of the APTA Transit Expo '93.

INTERNATIONAL VIEW
54 *The Revival of Road-Running Rail*
by Brendan Read
Manchester is one of the first serious revivers of road-running rail in England.

TECHNICAL EXPERTISE
62 *Answering Questions About Heavy-Duty Lifts*
by Heidi Tolliver
Before buying a heavy-duty lift, there are a number of key points you should consider.

NORTH AMERICAN PROFILE
66 *New Hampshire Shifts Toward Mass Transit*
by Brendan Read
New Hampshire, traditionally a car-dominated state, is moving toward mass transit.



IVHS AMERICA

The Official Publication of the Intelligent Vehicle-Highway Society of America

Volume III Number 8 • August 1993

ANSI Names IVHS AMERICA U.S. Administrator for ISO TAG



Spreitzer

The American National Standards Institute (ANSI), acting as international secretariat of ISO/Technical Committee 204, last month selected IVHS AMERICA as U.S. TAG administrator for this new technical committee within the International Standards Organization (ISO).

ISO/TC 204, the International Standards Committee on IVHS, deals with IVHS and its European equivalent, RTI (Road Transport Informatics).

The U.S. Technical Advisory Group (TAG) to ISO has named William M. Spreitzer, a member of the IVHS AMERICA Coordinating Council, head of the U.S. delegation to ISO/TC 204. Spreitzer is technical director of the General Motors Corp IVHS Program Office.

ISO is an international federation of national standards-setting organizations, with members representing 90 countries. It promotes standards setting throughout the world. ISO assigned responsibility for the international secretariat of ISO/TC 204 to ANSI, which delegated the responsibility to the Society of Automotive Engineers (SAE).

ISO work in the United States is carried out by a TAG. The TAG initiates and approves new work items for each technical committee, determines the U.S. position on committee working drafts, drafts international standards, and provides technical experts to serve as U.S. delegates to each ISO/TC.

KEY ROLE.

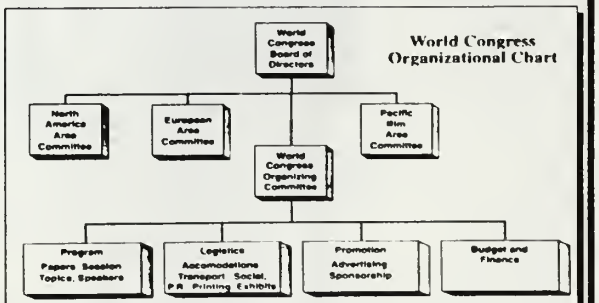
By selecting IVHS AMERICA to be the U.S. TAG administrator for ISO/TC

(See TAG, Page 11)

Japanese Back Plans for Series of IVHS World Congresses

The Japanese IVHS community joined last month in an IVHS AMERICA-led movement to create a series of annual IVHS World Congresses, the first of which will convene in Paris in November and December 1994.

An IVHS AMERICA delegation met in July in Japan with groups of Japanese businessmen, association executives, representatives of government ministries, and academics representing Japan's diverse IVHS interests. The Japanese representatives expect to establish an organization to coordinate their participation in a 1994 IVHS World Congress in Paris and a 1995 World Congress in Japan, and to send a delegation to an August meeting in



Paris of the World Congress Board of Directors.

IVHS AMERICA Board Member Russ Shields, International Liaison Committee Chairman Randy Dol, Executive Director Jim Costantino, and Industry Fellow Matt Stearns comprised the

(See World, Page 11)

August 1993

Railway Age

29 Customer service goes high-tech
Better relationships with customers are a top marketing priority for railroads

35 22nd Annual Car & Locomotive Repair Directory

95 NS's "Thoroughbred" innovators
The Innovative Research Group says it can save NS $40 million within five years

97 LIRR's freight comeback
With volume up and costs down, freight is turning a profit on the Long Island

103 Will railroads pay for quality?
Quality problems are examined at *Railway Age's* second C&S conference

107 Metro Link: Transportation plus
A strong component of multimodalism is at the heart of the new St Louis LRT

111 A great gathering, not-so-great results
A look at the Conference on Railroad Freight Transportation Research Needs

113 High speed rail and the freight railroads
Operating high speed passenger trains on existing lines could enhance profitability

16 Rail Update
How railroads are coping with Midwest flooding, GATX's TankTrainer, SP picks Ed Moyers, NZ Rail bought

24 Transit Update
ICE High speed on the Northeast Corridor White House chooses FTA slots Red Line gets extensions

COMMENTARY

4 Inside
9 Lines on Labor
10 Financially Speaking
12 Watching Washington
128 In Transit

DEPARTMENTS

6 Industry Outlook
8 The Railway Market
110 100 Years Ago
110 150 Years Ago
116 People
117 Products
118 Meetings
119 Bookshelf
119 Letters
121 Advertisers Index Ad Sales
122 Classified
127 Professional Directory

Cover photo courtesy CSX Transportation

ROADS® & BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 31/NO. 8 AUGUST 1993

FEATURES

26 *ConExpo '93 rolls sevens in Vegas extravaganza*
'Excitement under construction' theme of record breaking construction exposition hosted by Construction Industry Manufacturers Association

30 *Controls, advances spark grader, dozer efficiency*
Automatic blade controls, differential steering make machines more useful, easier to operate; cab comforts keep operators fresh, alert

36 *Glenwood Canyon takes top Pittsburgh honor*
Colorado DOT is awarded International Bridge Conference's Richardson Medal; Caltrans' Elliott honored for achievement with Roebling Medal

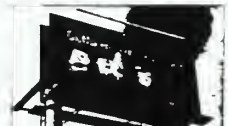
43 *Bridge lifting saves big bucks for county*
New Jersey bridge slated for demolition and replacement gets reprieve when field study shows it's sound; bridge is lifted to improve clearance

44 *Exodermic deck boosts bridge load rating*
Rapid deck replacement in New York State effected with use of proprietary deck design; Bid-Well deck finisher shuttles prefab units

48 *Specifier's Guide to Concrete Admixtures, Part II*

APA PLANNING CONTENTS

American Planning Association Vol 59 No 8 August 1993



7 **The Not-So-Super Superfund.** David Salvesen and Doug Porter wade into EPA's hazardous waste cleanup program

12 **Home Is Where the Art Is.** In St Paul struggling artists find spaces they can afford Bonnie Fournier reports

14 **Tales from the Recycling Front.** Reports from Seattle the Twin Cities and Montgomery County—in Planning Practice

19 **George Davis's Global Mission.** The former chief planner of the Adirondack Park Agency takes on the world By Read Kingsbury

22 **We're Off: Trends in Tourism.** Ecotourism and other news

5 **From the Capitals**
26 **Tech**
Outdoor lighting
27 **News**
After the flood. Northwest forests
29 **APA News**
In the winner's circle AICP demographics
30 **From the Board**
Picking the right one
31 **Letters**
Homework plannerese
34 **Planners Library**
Harland Bartholomew
35 **Conference Calendar**
35 **Consultant Directory**
42 **In the Works**
Flathead County Master Plan

APA PLANNING CONTENTS

American Planning Association Vol 59 No 9 September 199



8 **The Master of Diplomacy Steps Down.** After a half-century career APA's Israel Stollman is about to retire By William Lucy

12 **Dry Idea.** Five experts report on their experiences with water-saving landscapes—in Planning Practice

18 **HUDdling with Henry Cisneros.** Bill Fulton conducts a Q&A with the new Secretary of Housing and Urban Development

22 **Joining the Jet Set.** North Carolina is putting a lot of faith in a proposed cargo airport. Dennis Whittington reports

24 **A Little Bit of Seaside Comes to Southern California.** Nico Calavita describes a huge new town south of San Diego

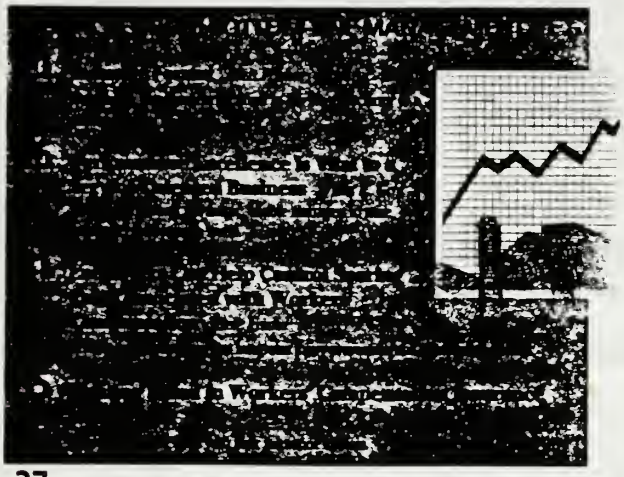
5 **From the Capitals**
26 **News**
Ontario study wetlands mitigation
28 **APA News**
Louisiana zoning exam Oregon report
30 **From the Board**
Think results
31 **Letters**
Stop building on floodways
32 **Planners Library**
Curmudgeon's complaint
35 **Conference Calendar**
35 **Consultant Directory**
42 **Viewpoint**
We're not dead yet says UCLA

September 1993
Vol. 32, No. 8

PARKING

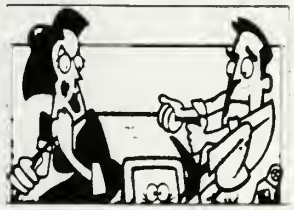
THE MAGAZINE OF THE PARKING INDUSTRY

MicroStation® MANAGER
VOLUME 3, NUMBER 8 AUGUST 1993





page 13



page 26

37 **Electric Vehicles Continued: Denmark's Kewet** *Rich Parker*
Despite a lack of speed and distance, it can fill a niche



39 **Parking Structure Lighting Simplified**
Donald R. Monahan, P.E.
A practical guide for determining lighting design options or evaluating existing illuminance

48 **Samir "Sam" Botros: Voyaging to Cleveland**
Lou Cook
NPA's GINP chairman crossed the sea to find his dream

INDUSTRIAL ENGINEERING

August, 1993 THE MAGAZINE FOR SYSTEMS INTEGRATORS Volume 25, No.8

FEATURES

24 IEs AT INSIGHT INDUSTRIES PUT THEIR COMPUTER EXPERTISE TO WORK
Computer knowledge is essential for helping these IEs identify problems and maintain quality. *By Sonja Lee*

29 CUMMINS ENGINE COMBINES NEW MANAGEMENT AND TECHNOLOGY TO DEVELOP STRATEGY FOR THE FUTURE
Cummins has brought together people, technology and materials movement to create a synchronous manufacturing system. *By Barbara Ettruh*

34 THE HUMAN SIDE OF KANBAN
The apparent simplicity of kanban masks subtleties that are important in implementation. *By Richard J. Schonberger*

37 LASER PRINTER ASSEMBLY IS A SNAP AT LEXMARK INTERNATIONAL
With the combined efforts of the manufacturing and IE teams at Lexmark, a faster assembly process has been achieved. *By Daniel Huber*

39 BUILDING AN OPERATIONS MANAGEMENT FOUNDATION THAT WILL LAST: TQM, JIT AND CIM
State-of-the-art high-technology operations management is based on this tri-cornered foundation. *By William B. Zachary and Eugene Richman*

46 MIXED MODEL OPERATIONS: SOLVING THE MANUFACTURING PUZZLE
A few leading edge companies are implementing mixed model operations to balance conflicting operational objectives of the 1990s. *By Mark D. Sammut and Al Barry*

51 FINE-TUNING REENGINEERING WITH WORKFLOW AUTOMATION: BLUEPRINT AND TOOL
Workflow system design can be used as a critical tool in the reengineering effort. *By Peter F. Lopes*

54 DESIGN FOR ANALYSIS LEADS TO A NEW CONCEPT IN PLATING LINES
Here is a system that proposes undertaking the design of a product while realizing that the design will need to be analyzed. *By Rajan Suri, Ramakrishna Desiraju and Masamu Shimizu*

61 INCREASED CUSTOMER SERVICE BEGINS IN THE ENGINEERING DEPARTMENT
Few engineering departments have adopted a customer-focused approach in their work within the organization. *By James G. Rickard*

63 IN SYNC WITH SYNCHRONOUS MANUFACTURING AT FORM RITE
Form Rite is implementing synchronous manufacturing at its Morristown, Tenn., plant to produce world-class products. *By Ron B. Artaljo*

64 ANNUAL STATE OF THE INSTITUTE REPORT

DEPARTMENTS

MicroScope 4
Dialog Box 10
New Products 11
News 15
Calendar 19
Dateline Intergraph 48
User Group Loop 50
The Resource File 56
Ad Index 56
The MarketPlace 57
Perspective 66

ON THE LEVEL

Nuts and Bolts 24
Super solutions
R. W. Schriner and Dominic A. Cali

Power Tools 26
How to create a multi-user environment
Hillmon W. Ancrum

Expert Systems 27
Check in/out: an automated approach
Jamie Wigglesworth

FEATURE

Exploring for oil with MicroStation 31
Susan Smith

Production plotting in network environments 36
Tobin Gilman

Enhancing your architectural practice: building 3D animation services 39
Eric Hanson

Hospital management with MicroStation and HealthCAD 45
Emily Suter

COLUMNS

EuroTech News 22
BSI European support program: CSP
Sandy Shaughnessy

Solutions 56
Mike Spearing

Puzzle answers 57
Crossware
Mjc Miller

MDL Interpreter 60
Traps for young players
Mach Dinh-Vu

Realtime 70
Upgrading usability
Ranjit S. Sahai

RAILWAY GAZETTE INTERNATIONAL

VOLUME 149 NUMBER 9
SEPTEMBER 1993

CONTENTS

ADAPTING TO WIN IN A COMPETITIVE MARKET 601
IRCA President Etienne Schouppe welcomes delegates to the 26th World Railway Congress in Lisboa

RAILWAY BROTHERHOOD MUST SURVIVE CHANGE 603
UIC President Peter Langager says railways must co-operate to exploit the benefits of technology and manage the change to a business culture

CP RESTRUCTURES TO LIFT MARKET SHARE 608
Portuguese Railways' Director of Planning Eng Raul Vilaca e Moura outlines CP's ambitious investment proposals

FIVE STRANDS IN UPGRADING STRATEGY 609

AVE UNDERPINS RENFE'S COMMERCIAL DRIVE 614
Mrs Merce Sala has been at the helm of Spanish National Railways for two years. We asked her about her management strategy, the AVE project and future investment

SAN MARTIN AND URQUIZA PASS TO PRIVATE CONTROL 619
Operational management of two of Argentina's six major railways was to be assumed by US-based Railroad Development Corp last month under 30 year concessions. A major priority for the new operator is locomotive reliability

ORIENTAL LUXURY TAKES TO THE RAILS 624
Three years of development work have been needed to create the luxury Eastern & Oriental Express

REMSA SHOW SIGNALS DIRECTION OF NORTH AMERICAN TRACK TECHNOLOGY 629
Over 130 companies covering the whole spectrum of permanent way gather in Denver this month for Remsa's Technology 2000 show

LEIPZIG SHOW DRAWS GERMAN INDUSTRY 633

PRODUCT NEWS 635
DIARY 638
PUBLICATIONS 638

HEADLINES

Novgorod Variant gets under way

CEREMONIES staged on July 30 marked the start of work on the 654.3 km high speed line between Moscow and St Petersburg (RG 3.92 p131). Dignitaries assembled beside the Kuzminka river 18 km from St Petersburg, to bury a stainless-steel time capsule in the foundations of a new bridge.

The two track 25 kV line is being built by the Russian High Speed Railways Shareholding Company (VSM), founded in September 1991. Following a third share issue on July 1, VSM has equity of 7bn roubles, 51% of which is held by the Russian government. Other shareholders are the city governments of Moscow and St Petersburg, the October Railway Administration, Cherepovets Metallurgical Works and French consultants Sofrerail.

The October Railway is heavily overloaded, and VSM Director Igor Kisilev says only 80% of prospective passengers can get tickets. Demand is expected to rise from 58.8 million passengers in 1988 to 94 million by 2015.

Work is concentrated on the first 147 km from St Petersburg to Meinukovo, near Novgorod, which is due to open in 1996. Diversion of utilities has begun in preparation for major civil works to get under way next year. A 13 km section is to be completed first to form a testbed for new trains.

Initial services will be worked by 250 km/h trainsets designated VSM-250, which are being developed by the Rubin marine design bureau for construction at the Tikhvin Transmash works. These will be derived from the ER200, highest axleload will be 18 tonnes.

Design of a lightweight VSM-350 train to run at 300 km/h is also in hand. With 912 seats in three classes, this will cut the Moscow – St Petersburg timing to 2 h 25 min by the end of the century. Both types will be dual-voltage so that they can run under 3 kV DC catenary to reach the present terminus. Up to 30 trains each way per day are envisaged for 2005, carrying 41 500 passengers/day. □



The prototype TEP80 Bo-Bo+Bo-Bo diesel loco built by Kolomna works has reached 260 km/h during trials between Moscow and St Petersburg

COMMENT 581
NEWS 582
CITY PAGE 585
INTELLIGENCE 588
PEOPLE 591
LETTERS 591
SIDETRACK 591
BEHIND THE NEWS 592
ANALYSIS 595

FIRST REPORT 597
Jabotabek sets take technology east
Amtrak commissions Genesis Series 1

VOLUME 149 NUMBER 8
AUGUST 1993

CONTENTS

NIGHT TRAINS TO WOO BUSINESS AND LEISURE MARKETS 541
The first rake of night stock for Channel Tunnel services is due for delivery in early 1995

SUPERLINER II PRECEDES VIEWLINER INTO SERVICE 545
Two designs of passenger coach are on order to expand Amtrak's long-distance fleet. Bombardier is building 140 double-deck Superliners, and Morrison Knudsen is supplying Viewliners

NS BUILDS TO HANDLE TRAFFIC BOOM 548
With ridership up by over 80% since 1985 and set to double again by 2010, Netherlands Railways is facing a severe shortage of rolling stock. Large orders have been placed for new designs, which will be coming on stream in 1995-96

HONING WEIGHT LIFTS SPEEDS AND COMFORT 552
JR East, JR West and JR Central are testing a range of bogie designs on the latest shinkansen rolling stock

PANORAMA CARS OFFER LUXURY ALPINE RIDE 556
Unsurpassed views of the Alps are offered by a fleet of metre gauge panorama cars introduced this summer on the *Glacier Express*

AMERICA RETURNS TO PASSENGER COACH BUILDING 559
Morrison Knudsen is preparing to fabricate stainless steel bodyshells at a former Pullman factory in Chicago. Richard Hope reports

ØRESUND LINK DRAWS SCANDS INTO EUROPE
Work should begin next mon approaches to the second gre crossing that will finally join rails of Sweden and Norway Continental network

INTERNATIONAL FORUM LOOKS TO HARNESS TECHNOLOGY BENEFITS
Delegates at the Fifth Interna Heavy Haul Conference, stag Beijing on June 6-13, called fi closer co-operation to share i search data with other opera

PENDULUM WAGON TESTS TRACK DYNAMICS

PRODUCT NEWS
DIARY
PUBLICATIONS

HEADLINES

Investment deal speeds Swedish link

SWEDEN'S National Rail Infrastructure Authority (Banverket) has stepped up construction work on several key projects following approval of its next 10-year rail investment strategy. The Swedish parliament has largely accepted the government's SKr32bn package, which was selected from a range of alternatives submitted by Banverket on January 15.

BV must complete discussions with regional authorities and railway operators this autumn before the package is finally authorised, but acceptance of the principal recommendations by the parliament has cleared the way for work to be accelerated on several routes.

Banverket Planning Director Karl Sicking confirmed on July 16 that construction of the 42 km link to Stockholm's Arlanda airport had reached full speed. The state is now putting SKr3.5bn into this scheme as a joint venture with private sector partners. Upgrading of the West Coast line is to be speeded up, so that double-track from Goteborg to Malmo is ready by the time the Øresund fixed link is opened (p564). SKr3bn has been allocated for modernisation of the Stockholm – Sundsvall line, in conjunction with the introduction of X2000.

Over SKr18bn is allocated for infrastructure improvements the next three years, although government plan to switch fr grants to loans was rejected b parliament. An early start is for on the proposed North Li upgrading from Goteborg to and reconstruction of the Sto holm – Nykoping – Norrkopi Linkoping route. BV has beer to set its own priorities for wo these routes, and on the plan Bothia Coast high speed line Sundsvall to Kramfors, Orns-koldsvik, and Umeå. □



First of three 1 067 mm gauge four-car EMUs financed by Belgian and Dutch development aid left the Brugge plant of Bombardier-Eurorail July 9 bound for the 1·5 kV DC Jabotabek suburban network in Indone Three partly assembled units will follow, with a seventh being sent in kit form for assembly by PT Inka in Madiun (RG 12.92 p853)

COMMENT 521
NEWS 522
CITY PAGE 525
PEOPLE 527
INTELLIGENCE 528
LETTERS 531
SIDETRACK 531
BEHIND THE NEWS 532
ANALYSIS 535

FIRST REPORT 537
Baldaur inaugurates Toulouse VAL
China evaluates Bo-Bo-Bo prototype

September 1993
Volume 7 Number 4

PTI JOURNAL

PUBLIC TRANSPORTATION INNOVATION

TABLE OF CONTENTS

Features

2 Alternative Fuels
FTA's Alternative Fuels Program overtaken by Department of Defense spending

4 Defense Technomania
Defense companies move to transportation systems development

7 Mobile Data Terminals
ADA efficiency requirements drive the market for this IVHS technology

12 Telecommuting
Managing telecommuters effectively

Vol. 34 No. 7/8 July/August 1993 ISSN 0041-0683

Traffic Engineering + Control

350 The use of Stated Preference techniques to investigate likely responses to changes in workplace parking supply
P Clark and R E Allsop

355 A PC-oriented GIS application for road safety analysis and management
A Peled and A S Hakkert

362 The 1992 Great Santiago Origin-Destination Survey: methodological design and main results
J de D Ortuzar, A M Ivenc, Henry Malbran and A Thomas

369 The grounding of vehicles on road humps
D C Webster

372 Risk on the roads
3 Links between attitudes and perceptions of risk and applications of the results
D Silcock, T Carthy, D Packham, D Sattar and N Rhodes-Defty

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116

Leonard Adams
Government Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS.STL1.3:1993/5

SELECTED ACQUISTIONS

SEPTEMBER - OCTOBER 1993

GOVERNMENT DOCUMENTS COLLECTION

NOV 23 1993

University of Massachusetts Depository Copy

STATE TRANSPORTATION LIBRARY

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Lynn Matis
Law Librarian

Irene Guthrie
Secretary

SELECTED ARTICLES FROM LEGAL PERIODICALS

CREDULOUS COURTS AND THE TORTURED TRILOGY:THE IMPROPER USE OF SUMMARY JUDGMENT IN TITLE V11 AND ADEA CASES by Ann C. MCGinley, *Boston College Law Review,* March 1993, p.203-256.

MODEL PROCEDURES FOR SEXUAL HARASSMENT CLAIMS by Andrea Williams, *Arbitration Journal,* September 1993,p.66-75.

RECENT DEVELOPMENTS IN AVIATION CASE LAW by James C. Stoud, *Journal of Air Law and Commerce,* Sept-Oct,1992, p.1-76.

SEXUAL ORIENTATION AND THE WORKPLACE: RECENT DEVELOPMENTS IN DISCRIMINATION AND HARASSMENT LAW by Megan P. Norris and Mark A. Randon, *Employee Relations Law Journal,* p.233-246.

STATE REMEDIES FOR SEXUAL HARASSMENT AT WORK by Alba Conte, *Trial,* November 1993, p.56-61.

STRICT LIABILITY OF INDIVIDUALS UNDER CERCLA:A NORMATIVE ANALYSIS by Lynda J. Oswald, *Boston College Environmental Affairs, Boston College Environmental Affairs Law Review,* Summer 1993, p.579-637.

WALKING A FINE LINE: MANAGING THE CONFLICTING OBLIGATIONS OF THE AMERICANS WITH DISABILITIES ACT AND WORKERS' COMPENSATION LAWS by Carla R. Walworth, Lisa J. Damon and Carole F. Wilder, *Employee Relations Law Journal,* Autumn 1993, p.231-236.

TO ORDER A COPY OF AN ARTICLE(S), YOU MAY COMPLETE THE REQUEST FORM AT THE END OF THIS BOOKLET BY LISTING THE TITLE OF THE ARTICLE(S) AND THE NAME OF THE JOURNAL(S).

AGED AUTOMOBILE DRIVERS--UNITED STATES--PSYCHOLOGY.

TL
152.3
.S72
T72
1993

Staplin, Loren.
Traffic maneuver problems of older drivers : final technical report / [Loren Staplin, Kathy Lococo and James Sim]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xii, 201 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-092

1. Aged automobile drivers--United States--Psychology. 2. Traffic accidents--United States. 3. Traffic conflicts. 4. Motion perception (Vision)

13 SEP 93 28567954 TLBAsc

AIDS TO NAVIGATION.

VK
1010
.L39
C65
1993

Laxar, Kevin.
A comparison of simulated parallax and single-station range aids to navigation / Kevin Laxar and S.M. Luria (Naval Submarine Medical Research Laboratory), Marc B. Mandler (U.S. Coast Guard Research and Development Center). -- Washington, DC : U.S. Coast Guard, Office of Engineering, Logistics, and Development ; Springfield, Va. : Available through the National Technical Information Service, [1993]
viii, 51 p. : ill. ; 28 cm.
STRN: CG-D-03-93
1. Aids to navigation. 2. Signal lights. 3. V isibility.

15 SEP 93 28318450 TLBAsc

AIR--POLLUTION.

TD
883.2
.U54
A472
1991

United States. General Accounting Office.
Air pollution : EPA may not fully achieve toxic air deposition goals : report to the Chairman, Subcommittee on Health and the Environment, Committee on Energy and Commerce, House of Representatives / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1991].
36 p. ; 28 cm.

1. Air--Pollution.

16 SEP 93 24303919 TLBAsc

AIR--POLLUTION--UNITED STATES--CASE STUDIES.

TD
883.2
.M34
A37
1992

Malaspina, Mark.
Air pollution solutions / Mark Malaspina, Kristin Schafer, Richard Wiles. -- 1st. ed. -- Washington, D.C. : The Environmental Exchange c1992.
vi, 113 p. : ill.; 25 cm. -- (What works ; no. 1.)

1. Air--Pollution--United States--Case studies. 2. Air quality management. 3. Air pollution.

04 OCT 93 27700697 TLBAsc

AIRLINES--FOREIGN OWNERSHIP--LAW AND LEGISLATION--UNITED STATES--EVALUATION.

HE
9803
.A4
U546
1992

United States. General Accounting Office.
Airline competition : impact of changing foreign investment and contr limits on U.S. airlines : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
75 p. ; 28 cm.

13 SEP 93 27255137 TLBAsc SEE NEXT CF

AIRLINES--INSPECTION--GOVERNMENT POLICY--UNITED STATES.

TL
553.5
.U54
A944
1992

United States. General Accounting Office.
Aviation safety : increased oversig of foreign carriers needed : report t the Chairman, Subcommittee on Investigations and Oversight, Committ on Public Works and Transportation, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
19 p. ; 28 cm.

13 SEP 93 27203896 TLBAsc SEE NEXT C

AIRPLANES--ICE PREVENTION.

TL
557
.I3
U54
1992

United States. General Accounting Office.
Aviation safety : new regulations f deicing aircraft could be strengthene : report to the ranking minority member, Subcommittee on Transportatio and Related Agencies, Committee on Appropriations, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
17 p. ; 28 cm.
1. Airplanes--Ice prevention. 2. Aeronautics--Safety regulations--Unit States. 3. Aeronautics--United State --Safety measures.

13 SEP 93 27214878 TLBAsc

AMTRAK--AUDITING.

HE
2791
.A3
U544
1992

United States. General Accounting Office.
Amtrak training : improvements need for employees who inspect and maintai rail equipment : report to the Chair, Government Activities and Transportation Subcommittee, Committe on Government Operations, House of Representatives / United States Gener Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
36 p. ; 28 cm.
1. Railroads--Employees--Training o --United States. 2. Amtrak--Auditing.

13 SEP 93 27290126 TLBAsc

AMTRAK--FINANCE--EVALUATION.

HE
2791
.A3
U545
1992

United States. General Accounting Office.
Amtrak : information on Amtrak's operating expenses : fact sheet for Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
27 p. ; 28 cm.

1. Amtrak--Auditing. 2. Amtrak--Finance--Evaluation. 3. Railroads--United States--Auditing.

05 OCT 93 25760766 TLBAsc

ARCHITECTURE--HUMAN FACTORS.

NA
2750
.A77
W39
1992

Arthur, Paul.
Wayfinding : people, signs, and architecture / Paul Artbur and Romedi Passini. -- New York : McGraw-Hill Book Co., c1992.
xiii, 238 p. : ill. ; 28 cm.
ISBN 0-07-551016-2

1. Communication in architectural design. 2. Arcbitecture--Human factors. 3. Architecture--Decision making.

30 SEP 93 26407651 TLBAsc 92-187163

ASPHALT CONCRETE--RESEARCH--TEXAS.

TE
270
.L57
I46
1992

Little, Dallas N.
Improved ACP mixture design : development and verification / by Dallas N. Little and Hisham A. Youssef. -- College Station : Texas Transportation Institute, Texas A&M University ; Springfield, Va. : Available through tbe National Technical Information Service, [1992]
1 v. (various pagings) : ill. ; 28 cm. -- (Research report / Texas Transportation Institute, Texas A&M University ; 1170-1F)
STRN: FHWA/TX-92/1170-1F
1. Asphalt concrete--Research--Texas. 2. Pavements, Asphalt concrete--Research--Tex as.

13 SEP 93 28229005 TLBAsc

AUTOMOBILE INDUSTRY AND TRADE--JAPAN.

HD
9710
.A972

The Automobile industry, Toyota and Japan. -- Aichi, Japan : Toyota Motor Corporation,
v. : ill. ; 28 cm.
Continues: Automobile industry, Japan and Toyota.

1. Automobile industry and trade--Japan. 2. Toyota automobile.

30 SEP 93 28607129 TLBAsc

AUTOMOBILE MECHANICS--CERTIFICATION UNITED STATES.

TL
152
.S52
A97
1985

Sharp, David, 1936-
Automobile mechanic certification tests : intensive preparation for the certification program of the National Institute for Automotive Service Excellence (N.I.A.S.E.) / David Sharp -- 2nd ed. / rev. by William Flerx .. [et al.]. -- New York : Arco, c1985.
228 p. : ill. ; 26 cm.
ISBN 0-668-06326-2 (pbk.)

1. Automobiles--Maintenance and repair--Examinations, questions, etc. 2. Automobile mecbanics--Certificatic --United States.

14 SEP 93 12553083 TLBAsc 85-186

AUTOMOBILE PARKING--CALIFORNIA, SOUTHERN--RATES.

TL
175.5
.C2
W54
1992

Willson, Richard W.
Suburban parking economics and poli : case studies of office worksites ir Southern California / prepared by Richard W. Willson. -- Washington, D. : Federal Transit Administration, University Research and Training Program ; [Springfield, Va. : Availabl through the National Technical Information Service, 1992]
vi, 138 p. : map ; 28 cm.
STRN: FTA-CA-11-0036-92-1
1. Automobile parking--California, Southern--Rates. 2. Suburbs--California, Southern. 3. Business parks--California, Southern. 4. Employee frin ge benefits--California, S outhern. 5. Choice transportatio n.

07 OCT 93 27174976 TLBAsc

BRIDGES, CONCRETE--FLOORS--CATHODIC PROTECTION.

TG
335
.C37
1993

Cathodic protection developments for prestressed concrete components / [Wagner ... et al.]. -- McLean, Va. Federal Highway Administration, [Office of Engineering and Highway Operations ; Springfield, VA : Available through the National Technical Information Service, 1992
xiv, 211 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-056

1. Bridges, Concrete--Floors--Cathodic protection. 2. Bridges, Concrete--Floors--Maintenance and repair. 3. Prestressed concrete construction--Maintenance and repair.

07 OCT 93 28196690 TLBAsc

BRIDGES, CONCRETE--FLOORS--MAINTENANCE AND REPAIR.

TG
335
.C37
C37
1992

Carello, Richard A.
Catbodic protection of a reinforced concrete bridge deck and soffit using metallized zinc : report / prepared b Richard A. Carello, Douglas M. Parks. -- [Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1992]
x, 75 p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-91/05
1. Reinforced concrete--Corrosion. 2. Bridges, Concrete--Floors--Maintenance and repair. 3. Bridges, Concrete--Flo ors--Cathodic protection. 4. Zinc coating. 5. Deicing cbemi cals.

15 SEP 93 27872747 TLBAsc

BRIDGES--TEXAS--FLOORS--TESTING.

TG
325.6
.W42
E92
1992

Webb, Stuart T.
Evaluation of bridge decks as lateral bracing for supporting steel stringers / by Stuart T. Webb and Joseph A. Yura ; conducted for Texas Department of Transportation by Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xiii, 65 p. ; 28 cm. -- (Research report / Center for Transportation Research, University of Texas at Austin ; no. 1239-3)
STRN: FHWA/ TX-92+1239-3

30 AUG 93 27698482 TLBAsc SEE NEXT CRD

CHANGE (PSYCHOLOGY)

BF
637
.C4
G65
1992

Goman, Carol Kinsey.
Adapting to change : making it work for you / Carol Kinsey Goman. -- Menl Park, CA : Crisp Publications, c1992.
90 p. : ill. ; 26 cm.
ISBN 1-56052-192-8 (pbk.)

1. Change (Psychology) 2. Adaptability (Psychology) 3. Success Psychological aspects.

30 SEP 93 28587978 TLBAsc 92-543

BUILDINGS--MASSACHUSETTS--ARCHIVAL RESOURCES.

REF.
CD
3294
.B84
1993

The Built environment : a guide to state government records of Massachusetts. -- [Boston, Mass.] : Massachusetts Archives, Office of the Secretary of State, [1993]
xxv, 375 p. ; 28 cm.

1. Buildings--Massachusetts--Archival resources. 2. Archives--Massachusetts --Catalogs. 3. Human ecology-- Massachusetts--Archival resources. 4. Public works--Massachusetts--Archival resources.

07 OCT 93 27765224 TLBAsc

CITY PLANNING AND REDEVELOPMENT LAW UNITED STATES--DICTIONARIES.

REF.
HT
167
.M67
N48
1993

Moskowitz, Harvey S.
The new illustrated book of development definitions / by Harvey S Moskowitz and Carl G. Lindbloom. -- N Brunswick, N.J. : Center for Urban Policy Research, c1993.
xxii, 306 p. : ill. ; 26 cm.
ISBN 0-88285-144-6

1. City planning--United States-- Dictionaries. 2. Zoning--United States--Dictionaries. 3. City planni and redevelopment law--United States- Dictionaries. 4. Rural development-- United States--Dictionaries.

27 SEP 93 26014178 TLBAsc 92-193

BUSES--UNITED STATES--MAINTENANCE AND REPAIR--COSTS.

HE
4351
.P765
1993

Estimation of operating and maintenance costs for transit systems : final report / prepared by KPMG Peat Marwick. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, [1993]
ca. 150 p. in various pagings ; 28 cm.
1. Local transit--United States-- Maintenance and repair--Costs. 2. Buses--United States--Maintenance and repair--Costs. 3. Local transit-- United States--Cost of operation. 4. Bus lines--United States--Cost of operation.

30 AUG 93 28168283 TLBAsc

CONSTRUCTION EQUIPMENT--HANDBOOKS, MANUALS, ETC.

REF.
TH
435
.M42
C64
1993

Ringwald, Richard C.
Means heavy construction handbook : practical guide to estimating and accounting methods, operations/ equipment requirements, hazardous sit evaluation/remediation / Richard C. Ringwald, contributing author, Franci J. Hopcroft. -- Kingston, MA : R.S. Means Co., c1993.
viii, 433 p. : ill. ; 25 cm.
ISBN 0-87629-283-X

1. Construction equipment--Handbook manuals, etc. 2. Construction industry--Handbooks, manuals, etc.

14 OCT 93 28204649 TLBAsc

CAREER CHANGES.

HF
5384
.D82
B68
1992

DuBrin, Andrew J.
Bouncing back : how to stay in the game when your career is on the line / Andrew J. DuBrin. -- New York : McGraw-Hill, c1992.
xii, 237 p. ; 23 cm.
ISBN 0-07-017901-8

1. Career changes. 2. Unemployment-- Psychological aspects. 3. Executives. 4. Executives--Life skills guides.

30 AUG 93 24173524 TLBAsc 91-27944

CUSTOMER RELATIONS.

HF
5415.5
.M34
T34
1992

Major, Grace.
Take charge! : how to manage your customer relationships / Grace Major. -- Executive ed. -- Fairfax, Va. : Sigma Books, c1992.
xxiii, 266 p. : ill. ; 23 cm.
ISBN 0-9632406-1-7

1. Customer relations. 2. Customer service.

13 SEP 93 26998989 TLBAsc 92-603

CYCLING--CONGRESSES.

GV
1041
.C66
B52
1992

Conférence Vélo mondiale--Pro Bike--Velo City (1992 : Montreal, Quebec)
The bicycle--global perspectives : papers / presented at the Conférence Velo mondiale--Pro Bike--Velo City, Montreal, September 13-17, 1992 ; compiled by Robert Boivin and Jean-François Pronovost ; [translation, Jacques F. Bergeron et al.] = Perspectives mondiales sur le vélo : textes des présentations à la Conférence Vélo mondiale--Pro Bike--Velo City, Montréal, 13 au 17 septembre 1992 / édition préparée sous la direction de Robert Boivin et Jean-François Pronovost ; [traduction, Jacques F. Bergeron et al.]. -- Montreal : Vélo Québec, c1992.
575 p. : ill., maps, ports. ; 28

13 SEP 93 27228245 TLBAsc SEE NEXT CRD

DISCRIMINATION IN EMPLOYMENT--UNITED STATES.

JK
765
.U54
F423
1992

United States. General Accounting Office.
Federal workforce : agencies' estimated costs for counseling and processing discrimination complaints : fact sheet for Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
35 p. ; 28 cm.

1. Discrimination in employment--United States. 2. Civil service--United States--Personnel management--Costs.

13 SEP 93 25598024 TLBAsc

DRINKING AND TRAFFIC ACCIDENTS.

HE
5620
.D7
E33
1992

The Effects of blood alcohol levels on driving simulator, coordination, and reaction time tests in a high risk population : objective and subjective measures / Daniel J. Cox ... [et al.]. -- Washington, D.C. : AAA Foundation for Traffic Safety, [1992]
vi, 64 p. ; 28 cm.

1. Drinking and traffic accidents. 2. Teenage automobile drivers--Psychology. 3. Blood alcohol.

30 AUG 93 26524315 TLBAsc

EMPLOYEE-MANAGEMENT RELATIONS IN GOVERNMENT--UNITED STATES.

HD
8008
.U54
F42
1991

United States. General Accounting Office.
Federal labor relations : a program in need of reform : report to congressional committees / United States General Accounting Office. -- Washington, D.C. : The Office, 1991.
102 p. : ill. ; 28 cm.

1. Employee-management relations in government--United States. 2. Civil service--United States.

13 SEP 93 24584930 TLBAsc

ENGINEERING--MANAGEMENT.

TA
190
.O24
P76
1993

Oberlender, Garold D.
Project management for engineering and construction / Garold D. Oberlender. -- New York : McGraw-Hill c1993.
xiv, 272 p. : ill. ; 25 cm. -- (McGraw-Hill series in construction engineering and project management)
ISBN 0-07-048150-4

1. Engineering--Management.

12 OCT 93 26767751 TLBAsc 92-337

ENVIRONMENTAL ENGINEERING--DICTIONARIES.

REF.
TD
9
.S73
F32
1990

Stevenson, L. Harold, 1940-
The Facts On File dictionary of environmental science / L. Harold Stevenson, Bruce Wyman. -- New York : Facts On File, c1991.
294 p. ; 24 cm.
ISBN 0-8160-2317-4 (alk. paper)

1. Environmental engineering--Dictionaries. 2. Environmental protection--Dictionaries. 3. Environmental sciences--Dictionaries.

30 SEP 93 22954165 TLBAsc 90-28139r9

FOUNDATIONS--CONGRESSES.

TA
775
.F68
P76
1975

Foundation Deformation Prediction Symposium (1974 : Massachusetts Institute of Technology)
Proceedings of the Foundation Deformation Prediction Symposium held at Massachusetts Institute of Technology, Cambridge, Mass., Nov. 13-15, 1974. -- Washington : Federal Highway Administration ; Springfield, Va. : Available through the National Technical Information Service, 1975.
2 v. : ill. ; 28 cm. -- (Report - Federal Highway Administration ; no. FHWA-RD-75-515/516)

1. Foundations--Congresses.

13 SEP 93 2394646 TLBAsc

GREENHOUSE GASES--ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT COUNTRIES.

TD
885.5
.G73
C37
1993

Cars and climate change. -- Paris : OECD, 1993.
236 p. : ill. ; 27 cm. -- (Energy a the environment series)
ISBN 9264138048 (pbk.)

1. Greenhouse gases--Organisation f Economic Co-operation and Development Countries. 2. Transportation, Automotive--Organisation for Economic Co-operation and Development Countrie --Environmental aspects. 3. Air--Pollution--Organisation for Economic Co-operation and Development Countrie --Government policy.

15 SEP 93 28320178 TLBAsc

GROUNDWATER--POLLUTION--FORECASTING.

TD
403
.U54
G76
1992

United States. General Accounting Office.
Groundwater protection : validity and feasibility of EPA's differential protection strategy : report to the Chairman, Subcommittee on Superfund, Ocean and Water Protection, Committee on Environment and Public Works, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
104 p. : ill., forms ; 28 cm.
1. Groundwater--Pollution--Forecasting. 2. Environmental protection--United States--States. 3. Pesticides--Environmental aspects--United States.

13 SEP 93 27368798 TLBAsc

HANDICAPPED--EMPLOYMENT.

KF
3469
.D52
S96
1993

Dickson, Mary B.
Supervising employees with disabilities : beyond ADA compliance / Mary B. Dickson.
xiv, 124 p. ; 26 cm. -- (A fifty minute series book.)
ISBN 1-56052-209-7 (pbk)

1. Supervision of employees. 2. Handicapped--Employment.

14 OCT 93 28573952 TLBAsc 92-75714

HARBORS.

HE
551
.J36
P67
1982

Jansson, Jan Owen.
Port economics / Jan Owen Jansson and Dan Shneerson. -- Cambridge, Mass. : MIT Press, c1982.
ix, 183 p. : ill. ; 24 cm. -- (MIT Press series in transportation studies ; 8)
ISBN 0-262-10025-8

1. Harbors.

12 OCT 93 8386459 TLBAsc 82-7130

HARBORS--ACCESS--GOVERNMENT POLICY--CALIFORNIA.

HE
554
.A6
C2
1990

Improving access to California's ports / prepared by California Transportation Commission ; in cooperation with California Department of Transportation [and] California Association of Port Authorities. -- [Sacramento] : California Transportation Commission, [1990]
28 leaves ; 28 cm.

1. Harbors--Access--Government policy--California. 2. Highway planning--California.

30 AUG 93 21245463 TLBAsc

HAZARDOUS SUBSTANCES--ARIZONA--TRANSPORTATION.

T
55.3
.H3
A52
1993

Anders, Charles D.
Comparative risks of transporting hazardous materials on the state highway system in Arizona / prepared Charles D. Anders, James C. Olsten (Dames & Moore). -- Phoenix, Ariz. : Arizona Dept. of Transportation ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
226 p. in various pagings : maps ; cm. + 1 folded map in pocket.
STRN: FHWA-AZ93-285
1. Hazardous substances--Arizona--Transportation. 2. Hazardous substances--Arizona--Accidents. 3. Traffic accidents--Arizona.

15 SEP 93 28179595 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--WASHINGTON (STATE)--SEATTLE METROPOLITAN AREA--EVALUATION.

HE
336
.H4
U42
1993

Ulberg, Cy.
HOV lane enforcement evaluation / by Cy Ulberg, Eldon L. Jacobson (Washington State Transportation Center). -- Olympia, Wash. : Washington State Dept. of Transportation ; [Springfield, VA : Available through the National Technical Information Service, 1993]
v, 53, A-4 p. : ill. ; 28 cm.
STRN: WA-RD 281.1

30 SEP 93 27744130 TLBAsc SEE NEXT C

HIGH SPEED GROUND TRANSPORTATION--WASHINGTON (STATE)--PLANNING.

Oversize
TF
1324
.W2
H53
1992

High Speed Ground Transportation Steering Committee (Wash.)
High speed ground transportation study : final report / submitted by High Speed Ground Transportation Steering Committee ; prepared by Gannett Fleming, Inc. ; in associatio with Parsons Brinckerhoff Quade & Douglas ... [et al.]. -- [Olympia, WA The Committee, 1992]
1 v. (various pagings) : ill., maps 30 cm. + executive summary (ii, 28 p.

1. High speed ground transportation Washington (State)--Planning. 2. High speed trains--Washington (State)--Planning.

05 OCT 93 27723029 TLBAsc

HIGHWAY CAPACITY--TEXAS.

HE
336
.H48
R56
1992

Ringert, John.
An evaluation of freeway capacity i Texas / by John Ringert and Thomas Urbanik II. -- College Station, Tex. Texas Transportation Institute, Texas & M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xi, 164 p. : ill. ; 28 cm. -- (Research report ; 1196-2F)
STRN: FHWA/TX-92/1196-2F

1. Highway capacity--Texas. 2. Traffic flow--Texas. 3. Speed limits Texas.

15 SEP 93 27841756 TLBAsc

INSTRUMENT LANDING SYSTEMS.

TL
696
.L33
U54
1992

United States. General Accounting Office.
Airspace system : emerging technologies may offer alternatives to the instrument landing system : report to the Chairman, Subcommittee on Transportation amnd Related Agencies, Committee on Appropriations, House of Representatives / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
39 p. : ill. ; 28 cm.
1. Instrument landing systems. 2. Landing aids (Aeronautics). 3. Microwave landing systems. 4. Airplanes--Landing--Technological innovations.

16 SEP 93 27010137 TLBAsc

INTERACTIVE VIDEO.

Oversize
TK
6687
.P47
P76
1990

Perlmutter, Martin.
Producer's guide to interactive videodiscs / Martin Perlmutter. -- White Plains, NY : Knowledge Industry Publications, c1991.
xiv, 206 p. : ill. ; 29 cm. -- (The Video bookshelf)
ISBN 0-86729-173-7

1. Interactive video.

28 SEP 93 22543569 TLBAsc 90-19233

INTERNET (COMPUTER NETWORK)

TK
5105.875
.I57
E87
1993

Estrada, Susan.
Connecting to the internet : a buyer's guide / Susan Estrada ; [editor, Dale Dougherty]. -- 1st ed. -- Sebastopol, CA : O'Reilly & Associates, Inc. c1993.
xv, 170 p. : ill. ; 23 cm.
ISBN 1-56592-061-9 (pbk.)

1. Internet (Computer network) 2. Computer networks.

12 OCT 93 28876740 TLBAsc

JET TRANSPORTS--UNITED STATES--DESIGN AND CONSTRUCTION.

TL
671.1
.U54
A37
1992

United States. General Accounting Office.
Aircraft certification : limited progress on developing international design standards / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
80 p. ; 28 cm.
1. Jet transports--United States--Design and construction. 2. Jet transports--Certification--United States. 3. Jet transports--Certification--International cooperation. 4. United States. Federal Aviation Administration.

15 SEP 93 26704851 TLBAsc

JOINT VENTURES--UNITED STATES.

HE
4461
.C47
T72
1992

Cervero, Robert.
Transit joint development in the United States / Robert Cervero, Pete Hall, John Landis. -- Berkeley, Cali (316 Wurster Hall, Berkeley 94720) : University of California at Berkeley Institute of Urban and Regional Development, [1992]
1 v. (various pagings) : ill., map 28 cm. -- (Monograph ; 42)
1. Local transit--United States--Management--Case studies. 2. Real estate development--United States--C studies. 3. Local transit--United States--Finance. 4. Joint ventures--United States. 5. Joint occupancy o buildings--Un ited States.

04 OCT 93 26941810 TLBAsc 93-620

LOCAL TRANSIT--MARKETING.

HE
4211
.C44
1993

Celebrating excellence in public transit : final report to the Feder Transit Administration, 1993 / coordinated by the Utah Transit Authority. -- [Washington, D.C.] : U.S. Dept. of Transportation, Feder Transit Administration, [1993]
229 p. : ill. ; 28 cm.

1. Local transit--United States--Marketing. 2. Local transit--United States--Management. 3. Local transit Marketing.

Rev-1 9-15-93 TLBAsc

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--HISTORY.

REF.
HE
4491
.B719
H533
1993

A chronicle of the Boston transit system : including a chonological of incidents affecting the MBTA / compiled by George M. Sanborn. -- 1993 Edition. -- Boston, Mass. : State Transportation Library, 1993.
ix, 79 p. : maps ; 28 cm.

1. Boston Metropolitan Area (Mass.) Transit systems--History. 2. Transportation--Massachusetts--Boston Metropolitan Area--History. 3. Massachusetts Bay Transportation Authority--History.

Rev-2 10-07-93 TLBAsc

MICROCOMPUTERS--PURCHASING.

QA
76.5
.S64
Q47
1992

Smith, Bud.
Que's 1993 computer buyer's guide Bud Smith. -- Carmel, IN : Que, c199
xxii, 432 p. : ill. ; 26 cm.
ISBN 1-56529-021-6

1. Microcomputers--Purchasing. 2. Computer software--Purchasing.

29 SEP 93 26817220 TLBAsc 92-61

OCCUPATIONAL SAFETY AND HEALTH ACT.

HD
7262
.T65
M36
1993

Tompkins, Neville C.
A manager's guide to OSHA / Neville C. Tompkins. -- Menlo Park, CA : Crisp Publications, 1993.
v, 89 p. : ill., forms, 26 cm. -- (A fifty minute series book)
ISBN 1-56052-180-5 (pbk)

1. Occupational Safety and Health Act. 2. United States. Occupational Safety and Health Administration. 3. Industrial safety. 4. Industrial hygiene. 5. Work environment.

14 OCT 93 28574084 TLBAsc 92-54632

PACIFIC RAILROADS--HISTORY.

HE
2751
.R34
1973

The railroaders / by the editors of Time-Life Books, with text by Keith Wheeler. New York : Time-Life Books, [1973]
240 p. : ill. ; 28 cm. (The Old West)

1. Pacific railroads--History. 2. Railroads--West (U.S.)--History. 3. West (U.S.)--History--1848-1950.

30 AUG 93 821106 TLBAsc 73-84316r853

PARKING LOTS--DESIGN AND CONSTRUCTION.

TL
175
.G843
1992

Guide for the design of park-and-ride facilities / [prepared by the Task Force for Public Transportation Facilities Design of the AASHTO Subcommittee on Design]. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1992.
viii, 85 p. : ill. ; 28 cm.
ISBN 1-56051-012-9

1. Fringe parking. 2. Parking lots--Design and construction. 3. Parking lots--Location.

04 OCT 93 26003154 TLBAsc

PARKING LOTS--DESIGN AND CONSTRUCTION.

TL
175
.G847
1990

Guidelines for parking facility location and design / prepared by Technical Council Committee 5D-8, chaired by Paul C. Box. -- Washington, DC : Institute of Transportation Engineers, 1990.
32 p. : ill. ; 28 cm. -- (ITE publication ; no. RP-022)

1. Parking lots--Design and construction. 2. Parking lots--Location.

05 OCT 93 22487280 TLBAsc

PAVEMENTS, ASPHALT--MAINTENANCE AND REPAIR.

TE
270
.I582
1991

Investigation of laboratory test methods for determining the curing rate of asphalt emulsions / by Cindy K. Estakhri ... [et al.] ; sponsored by the State Department of Highways and Public Transportation. -- Rev. Nov. 1991. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System, [1991]
viii, 113 p. ; 28 cm. -- (Research report ; 1157-1F)
STRN: FHWA/TX-92-1157

1. Pavements, Asphalt--Maintenance and repair. 2. Asphalt emulsion mixtures--Curing.

30 SEP 93 27389053 TLBAsc

PAVEMENTS--OVERLAYS--TESTING.

TE
220.3
.I58
1992

An Investigation of various factors affecting bond in bonded concrete overlays / by David P. Whitney ... [et al.] ; conducted for Texas Department of Transportation. -- Austin : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vi, 65 p. : ill. ; 28 cm. -- (Research report ; no. 920-5)
STRN: TX-92+920-5

1. Pavements--Overlays--Testing. 2. Pavements, Concrete--Testing. 3. Pavements, Reinforced concrete--Testing.

30 SEP 93 28056938 TLBAsc

PAVEMENTS, REINFORCED CONCRETE--TESTING.

TE
278.5
.I58
1991

An Investigation of strut-and-tie models for dapped beam details / by D.L. Barton ... [et al.]. -- Austin : University of Texas, Center for Transportation Research ; Springfield, Va. : Available through NTIS, [1991]
xxiii, 187 p. : ill. ; 28 cm. -- (Research report ; no. 1127-1)

1. Pavements, Reinforced concrete--Testing. 2. Reinforced concrete construction--Testing. 3. Concrete beams--Testing.

30 SEP 93 27251182 TLBAsc

PAVEMENTS--TESTING.

TE
250
.H46
S55
1992

Hendrick, J. K.
The simulation of vehicle dynamic effects on road pavements / [J.K. Hendrick, M.J. Marlowe, B. Brademeyer -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xv, 280 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-108

1. Pavements--Testing. 2. Pavement --Live loads--Testing. 3. Trucks--Dynamics--Simulation methods.

05 OCT 93 27342755 TLBAsc

PRESTRESSED CONCRETE BEAMS--DESIGN AND CONSTRUCTION.

TG
350
.R87
D47
1993

Russell, Bruce W.
Design guidelines for transfer, development and debonding of large diameter seven wire strands in pretensioned concrete girders / by Bruce W. Russell and Ned H. Burns ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xi, 286 p. : ill. ; 28 cm. -- (Research rep ort ; 1210-5F)
STRN: FHWA/ TX-93+1210-5F

30 SEP 93 28740728 TLBAsc SEE NEXT CRD

PRIVATIZATION--UNITED STATES.

HD
3865
.P74
1993

Privatization 1993 : seventh annual report on privatization / William D. Eggers, ed. -- Los Angeles, CA : Reason Foundation, c1993
58 p. : ill., charts ; 28 cm.

1. Privatization--United States. 2. Privatization.

30 SEP 93 28232674 TLBAsc

QUOTATIONS, ENGLISH.

REF.
PN
6081
.B27
F35
1992

Bartlett, John, 1820-1905.
Familiar quotations : a collection of passages, phrases, and proverbs traced to their sources in ancient and modern literature / John Bartlett ; Justin Kaplan, general editor. -- 16th ed. -- Boston : Little, Brown, 1992.
lvi, 1405 p. ; 27 cm.
ISBN 0-316-08277-5

1. Quotations, English.

05 OCT 93 23975729 TLBAsc 91-21170

REAL ESTATE DEVELOPMENT--LAW AND LEGISLATION--MASSACHUSETTS--BOSTON.

HD
268
.B7
D48
1986

Development review procedures / Boston Redevelopment Authority. -- Rev. -- [Boston, MA.] : The Authority, 1986.
22, [17] leaves : forms ; 28 cm.

1. Real estate development--Law and legislation--Massachusetts--Boston. 2. Real estate development--Massachusetts --Boston. 3. City planning--Massachusetts--Boston.

29 SEP 93 15876505 TLBAsc

RÉSUMÉS (EMPLOYMENT)

HF
5383
.L56
H68
1987

Linkemer, Bobbi.
How to write an effective resume / Bobbi Linkemer. -- New York, NY : AMACOM, c1987.
58 p. ; 18 cm. -- (The Successful office skills series)
ISBN 0-8144-7669-4 (pbk.)

1. Résumés (Employment)

05 OCT 93 15317091 TLBAsc 86-4781

ROAD DRAINAGE--ARIZONA--HANDBOOKS, MANUALS, ETC.

TE
215
.H53
1993

Highway drainage design manual hydrology : final report / prepared by NBS/Lowry Engineers & Planners Inc., George V. Sabol Consulting Engineers, Inc. -- Phoenix, Ariz. : Arizona Dept. of Transportation, [1993]
1 v. (various pagings) : ill. ; 28 cm.
STRN: FHWA-AZ93-281

1. Road drainage--Arizona--Handbooks manuals, etc. 2. Runoff--Arizona--Handbooks, manuals, etc.

13 SEP 93 28574423 TLBAsc

ROAD DRAINAGE--TESTING.

TE
215
.H92
1992

Hydraulic characteristics of recessed curb inlets and bridge drains / by Edward R. Holley ... [et al.]. -- Austin : Center for Transportation Research, the University of Texas ; [Springfield, Va. : Available throug the National Technical Information Service, 1992]
viii, 176 p. ; 28 cm. -- (Research report ; no. 1267-1F)
STRN: FHWA/TX-93+1267-1F

1. Road drainage--Testing. 2. Bridges--Drainage systems--Testing. 3 Runoff.

13 SEP 93 28523824 TLBAsc

ROAD MACHINERY--COSTS--AUDITING.

HE
355.3
.E6
U54
1993

United States. General Accounting Office.
Transportation infrastructure : oversight of rental rates for highway construction equipment is inadequate : report to Congressional committees / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P. O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
37 p. ; 28 cm.
1. Road machinery--Costs--Auditing. 2. Road construction contracts--United States. 3. United States. Federal Highway Administration.

13 SEP 93 28444135 TLBAsc

ROADS--DESIGN AND CONSTRUCTION.

TE
175
.F57
B57
1992

Fitzpatrick, Kay.
A historical and litsrature rsview of horizontal curvs design / hy Kay Fitzpatrick and Karen Kahl. -- College Station, Tex. : Tsxas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Availahle through ths National Tschnical Information Servics, 1992]
xii, 70 p. ; 28 cm. -- (Rssearch report ; 1949-1)
STRN: TX-92/1949-1

1. Roads--Dssign and construction. 2. Highway enginssring. 3. Curvss in sngineering.

13 SEP 93 27802386 TLBAsc

ROUTE 139 (MASS.)

HE
356.5
.B73
I572
1993

Route 139 intersection improvements, Pembroke-Marshfisld, Massachusetts / Federal Highway Administration and Massachusetts Highway Dspartment. -- Boston, Mass. : [Massachusetts Highway Dept.], 1993.
1 v. (various pagings) : ill., maps, plans ; 28 cm.

1. Route 139 (Mass.) 2. Roads--Massachusetts--Pembroke--Interchanges and intersections. 3. Roads--Massachusetts--Marshfield--Interchanges and intersections.

Rev-1 10-07-93 TLBAsc

SEXUAL HARASSMENT OF WOMEN--LAW AND LEGISLATION--UNITED STATES--PROBLEMS, EXERCISES, ETC.

KF
3467
.Z9
L53
1992

Lightle, Juliana.
Sexual harassment in the workplace : a guide to prevention / Juliana Lightle, and Elizabeth H. Doucet. -- Los Altos, CA : Crisp Publications, c1992.
116 p. : ill. ; 26 cm. -- (Fifty-Minute series)
ISBN 1-56052-153-8
1. Sexual harassment of womsn--Law and legislation--United States--Problems, exercises, etc. 2. Sex discrimination in employment--Law and legislation--United States--Problems, exercises, etc.

07 OCT 93 26323480 TLBAsc 91-78106

SHIPPING--TAXATION--UNITED STATES.

HE
587.7
.U54
M37
1993

United States. General Accounting Office.
Maritime industry : fsdsral assessments levied on commercial vessels : fact sheet for Congressional requesters / Unitsd States Gsnsral Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
196 p. ; 28 cm.

1. Shipping--Taxation--United States. 2. Tariff--Unitsd States. 3. Msrchant marine--United States.

12 OCT 93 27784061 TLBAsc

SOILS--TESTING.

TA
710.5
.K55
D43
1991

Kim, Dong-Soo.
Deformational characterlstics of soils at small to intsrmsdiate strains from cyclic tests / Dong-Soo Kim, Kenneth H. Stokoe, and W. Ronald Hudson. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Availahle through ths National Technical Information Servics, 1991]
ix, 142 p. : ill. ; 28 cm. -- (Rssearch rsport ; 1177-3)
STRN: FHWA/TX-92+1177-3
1. Soils--Testing. 2. Soil mschanics. 3. Shsar strsngth of soils --Testing.

30 AUG 93 28398440 TLBAsc

TOTAL QUALITY MANAGEMENT.

HD
62.15
.B37
B84
1992

Battsn, Jos D.
Building a total quality culture / J Jos Battsn. -- Msnlo Park, Calif. : Crisp Publications Inc., 1992.
vii, [3] 88 [1] p. : ill. ; 26 cm.
ISBN 1-56052-176-7

1. Total quality managsment. 2. Corporats culture.

15 SEP 93 27406602 TLBAsc 92-543

TOTAL QUALITY MANAGEMENT--UNITED STATES--CASE STUDIES.

HD
62.15
.H62
B68
1993

Hodgetts, Richard M.
Blueprints for continuous improvement : lessons from the Baldrige winners / Richard M. Hodgetts. -- New York : AM Membership Publications Division, American Management Association, c199
119 p. : ill. ; 21 cm. -- (AMA management hriefing)
ISBN 0-8144-2352-3

1. Total quality management--United States--Case studies. 2. Benchmarking (Management)--United States--Case studies. 3. Malcolm Baldrige National Quality Award.

07 OCT 93 28337833 TLBAsc 93-51

TRAFFIC FLOW--MATHEMATICAL MODELS.

TE
228
.M47
A66
1992

Messer, Carroll J.
An applications manual for svaluati two and thrse-lsvsl diamond interchan operations using TRANSYT-7F / by Carroll J. Messer and Meher P. Malakapalli. -- Collsge Station, Tex. Texas Transportation Institute, Texas & M University Systsm ; [Springfield, Va. : Available through National Technical Information Servics, 1992]
x, 100 p. : ill. ; 28 cm. -- (Rssearch report ; 1148-3)
STRN: FHWA/TX-92/1148-3
1. Traffic flow--Mathematical model 2. Roads--Intsrchanges and intsrsections. 3. Electronic traffic controls. 4. TRANSYT-7F (Compute program)

15 SEP 93 27467002 TLBAsc

TRAFFIC FLOW--TEXAS.

HE
336
.T7
U45
1992

Ullman, Gerald L.
Effect of freeway corridor attributes upon motorist diversion responses to real-time travel time traffic information / prepared by Gerald L. Ullman, Conrad L. Dudek and Kevin N. Balke. -- College Station, TX : Texas Transportation Institute, Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
viii, 53 p. ; 28 cm. -- (Research report ; 1232-13)
STRN: FHWA/TX-92/1232-13
1. Traffic flow--Texas. 2. Travel time (Traffic engineering)--Texas. 3. Highway commu nications--Texas. 4. Traffic signs and signals--Texas--Evaluation.

30 AUG 93 28173620 TLBAsc

TRAFFIC FLOW--TEXAS.

HE
336
.T7
H37
1992

Hanks, James W.
Evaluation of express lane effectiveness in freeway to freeway interchanges / by James W. Hanks, Jr., Kirk Barnes and John M. Mounce ; sponsored by Texas Department of Transportation. -- College Station, TX : Texas Transportation Institute, Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
xi, 29 p. : ill ; 28 cm. -- (Research report ; 1232-14)
STRN: FHWA/TX-92/1232-14
1. Traffic flow--Texas. 2. Roads--Texas--Interchanges and intersections. 3. Traffic co ngestion--Texas.

15 SEP 93 28050782 TLBAsc

TRAFFIC FLOW--TEXAS.

HE
336
.E3
T72
1992

Traffic and spatial impacts and the classification of small highway-bypassed cities / S. Johann Andersen ... [et al.] ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 108 p. : ill. ; 28 cm. -- (Research report ; 1247-2)
STRN: FHWA/TX-93+1247-2

13 SEP 93 28479467 TLBAsc SEE NEXT CRD

TRUCK DRIVERS--LICENSES--UNITED STATES.

TL
230.3
.T782
1990

Truck driver's guide to commercial driver licensing / by Highway Users Federation for Safety and Mobility and Robert W. Calvin. -- 1st ed. -- New York : Arco : Distributed by Prentice Hall Trade Sales, c1990.
xvi, 644 p. : ill. ; 28 cm.
ISBN 0-13-152258-2

1. Truck driving. 2. Truck drivers--Licenses--United States.

07 OCT 93 20393217 TLBAsc 89-27173

UNIX (COMPUTER FILE)

QA
76.76
.063
T66
1990

Topham, Douglas W., 1942-
The first book of UNIX / Douglas Topham. -- 1st ed. -- Carmel, IN : H. Sams, 1990.
xii, 288 p. : ill. ; 24 cm.
ISBN 0-672-27299-7 (pbk.)

1. UNIX (Computer file) 2. Operati systems (Computers)

30 SEP 93 21583022 TLBAsc 89-637

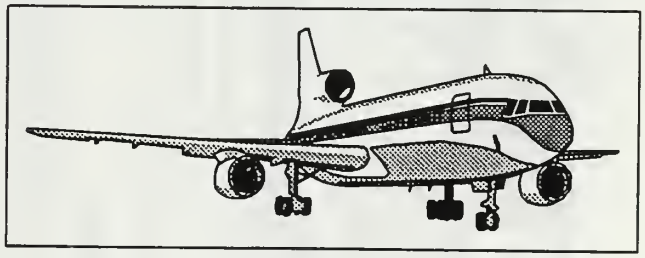
WOMEN EXECUTIVES--UNITED STATES.

HF
5500.3
.U54
S57
1993

Sitterly, Connie, 1953-
The woman manager : developing essential skills for success / Connie Sitterly. -- Menlo Park, Calif. : Cri Publications, c1993.
vii, 98 p. : ill. ; 26 cm. -- (A Fifty-minute series book)
ISBN 1-56052-206-2

1. Women executives--United States. 2. Women in business--United States.

05 OCT 93 28491983 TLBAsc 92-75



AMERICAN DEMOGRAPHICS

OCTOBER 1993 VOL. 15, NO. 10 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

The Master Trend 28

More than any previous generation, baby boomers put their individual needs ahead of group loyalty. This profound shift in attitudes rewards businesses that offer customization, immediacy, and value. It also causes social problems that could tear America apart. ..... *by Cheryl Russell*

The Newest Southerners 38

Atlanta's leaders are facing the national challenge of absorbing immigrants. Some fear that newly arrived Asians and Hispanics will steal jobs, but Atlanta's example shows that newcomers create new worlds of business opportunity. ..... *by Judith Waldrop*

Cities With Heart 46

Our author dropped pens and asked for change to rate kindness to strangers in 36 cities. America's meanest cities are likely to have high pollution and population density. The kindest cities have a tradition of helping: the winning town also finished first 50 years ago. ..... *by Robert V. Levine*

Exercising the Brain 56

Americans spend most of their leisure time watching TV, but they claim to prefer more complex activities like parties and skiing. Coaxing armchair athletes onto the field is how leisure businesses succeed, but it's a complex job because every sport is different. ..... *by Jim Spring*

BUSINESS REPORTS

What Do You Call a Dark-Skinned Person? 9

Metropolitan Areas Restored 10

Smile When You Say "Cowboy" 16

Fear and Marketing in Las Vegas 19

Planning No Family, Now or Ever 23

Demogaffes: Television Channeling 26

DEPARTMENTS

Editorial
The Trend Evolution 2

Seasons
Hot-Weather Hockey 4

Dear Dr. Demo
The "Boom" Boom 6

Letters 61

The Lincoln Sample 62

Demographic Forecasts
Grandparents Galore 63

New Frontiers
The Lonely Road 64

AMERICAN DEMOGRAPHICS INC. 127 W. STATE ST. ITHACA, NY 14850 TELEPHONE 1-800-828-1133

AMERICAN DEMOGRAPHICS

NOVEMBER 1993 VOL. 15, NO. 11 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

Sex and the Single Spender 28

One in four U.S. households is one person. Singles are a diverse market. They are increasingly likely to be homeowners, and they are great customers for restaurants. ..... *by Patricia Braus*

The Four Baby Booms 36

It's wrong to treat 77 million baby boomers as if they were one consumer market. This analysis reveals four distinct age segments within the baby boom. ..... *by Campbell Gibson*

Top Towns for Working Women 44

Working women's influence is strongest in collegetowns, state capitals, and the Midwest. Women are least likely to work in coal towns and retirement areas. ..... *by William P. O'Hare*

The Decade Waltz 48

Every time a year ends with a zero, trend-watchers make optimistic predictions on everything from politics to fashion. Won't they ever learn? ..... *by Diane Crispell and Andy Zukerberg*

How to Survey Your Community 52

With $15,000 and an army of volunteers, Louisville discovered which local issues were most important. Here's how to apply lessons from Louisville in your town. ..... *by J. Tod Fetherling*

BUSINESS REPORTS

Where New Taxes Take Their Toll 9

Country Music Probably Won't Kill You 10

Erotica Booms in a Dangerous Era 14

How the Color Mafia Chooses Clothes 21

How to Keep Customers Loyal 23

Why Canadians Like U.S. Food 25

DEPARTMENTS

Editorial
Thanks for the Ride 2

Seasons
27 Million Hernes 4

Mutimedia
Virtual Unreality 6

Letters 57

The Lincoln Sample 58

Demographic Forecasts
Mustering Out 59

New Frontiers
New Centeunrians 60

AMERICAN DEMOGRAPHICS INC. 127 W. STATE ST. ITHACA, NY 14850 TELEPHONE 1-800-828-1133

APA PLANNING CONTENTS

American Planning Association Vol. 59, No. 9 September 1993

8 **The Master of Diplomacy Steps Down.** After a half-century career, APA's Israel Stollman is about to retire. By William Lucy.

12 **Dry Idea.** Five experts report on their experiences with water-saving landscapes—in Planning Practice.

18 **HUDdling with Henry Cisneros.** Bill Fulton conducts a Q&A with the new Secretary of Housing and Urban Development.

22 **Joining the Jet Set.** North Carolina is putting a lot of faith in a proposed cargo airport, Dennis Whittington reports.

24 **A Little Bit of Seaside Comes to Southern California.** Nico Calavita describes a huge new town south of San Diego.

8



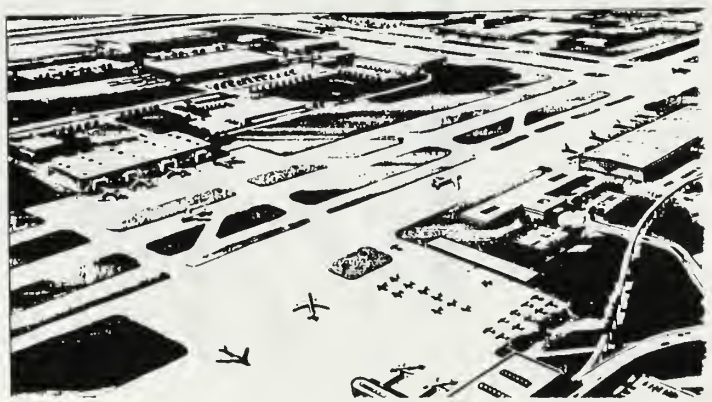
18



5 **From the Capitals**
26 **News**
Ontario study, wetlands mitigation.
28 **APA News**
Louisiana zoning exam, Oregon report.
30 **From the Board**
Think results.
31 **Letters**
Stop building on floodways.
32 **Planners Library**
Curmudgeon's complaint.
35 **Conference Calendar**
35 **Consultant Directory**
42 **Viewpoint**
We're not dead yet, says UCLA.

Cover: Burner & Company, landscape architects in Fort Myers, Florida, used Xeriscape in designing Boca Bay beach club on Gasparilla Island. Photo ©Oscar Thompson.

22



Art credits: Lisa Ebright (8); Courtesy HUD (18); North Carolina Air Cargo Airport Authority (22)

Published by the American Planning Association, 1313 E. 60th St., Chicago, IL 60637. APA's membership includes 12 monthly issues of Planning. From membership dues, $26 is the subscription fee for Planning. Nonmember subscribers pay $40 a year for 12 monthly issues of Planning ($55 foreign). Second-class postage paid at Chicago, Illinois. Additional entry at Greenfield, Ohio. Planning is a registered trademark. Copyright 1993 by the American Planning Association. Reprint permission must be requested in writing from APA. Planning is cataloged under the International Standard Serial Number I.S.S.N. 0001-2610.

Attn: Postmaster and subscribers

Please send change of address to: Subscription Department, American Planning Association, 1313 E. 60th St., Chicago, IL 60637, 312-955-9100. Please supply both old and new addresses.

APA PLANNING CONTENTS

American Planning Association Vol. 59, No. 10 October 1993

34



18



18 **Mall Wonder.** The Mall of America is big, it's profitable—and it's surprisingly successful, says Suzanne Rhees.

24 **Tough Love Works in Newark.** Sylvia Lewis profiles the New Community Corporation—part of a yearlong series on "America's Cities: What Works."

30 **Building Bikeways.** Michael Jones covers the ground in this month's Planning Practice.

Cover: At the New Community Corporation's World of Foods in Newark; photo by Laura Comppen.

30



5 **From the Capitals**
7 **APA News**
APA and AICP candidates' position statements.
34 **Tech**
Signs of change.
35 **News**
37 **From the Board**
Money, money, money.
37 **Letters**
Beyond retirement, more about gays.
38 **Planners Library**
Stop sprawl, try regionalism.
40 **Commissioners Memo**
Electronic town meetings, new task force.
43 **Conference Calendar**
44 **Consultant Directory**
50 **In the Works**
Rehabbing Harvard Yard.

Art credits: Bob Perza/ photo courtesy Mall of America (18); Dennis McClendon (30); Enamelhec (34)

Published by the American Planning Association, 1313 E. 60th St., Chicago, IL 60637. APA's membership includes 12 monthly issues of Planning. From membership dues, $26 is the subscription fee for Planning. Nonmember subscribers pay $40 a year for 12 monthly issues of Planning ($55 foreign). Second-class postage paid at Chicago, Illinois. Additional entry at Greenfield, Ohio. Planning is a registered trademark. Copyright 1993 by the American Planning Association. Reprint permission must be requested in writing from APA. Planning is cataloged under the International Standard Serial Number I.S.S.N. 0001-2610.

Attn: Postmaster and subscribers

Please send change of address to: Subscription Department, American Planning Association, 1313 E. 60th St., Chicago, IL 60637, 312-955-9100. Please supply both old and new addresses.

CIVIL ENGINEERING PRACTICE™ • JOURNAL OF THE BOSTON SOCIETY OF CIVIL ENGINEERS SECTION ASCE

CONTENTS

An Innovative Design for the Flood Protection System of a Riverside Development — GUNARS RICHTERS — 5
The use of steel barrier gates raised by cranes, counter-flooding and an early warning system combine to provide reliable and cost-effective flood protection.

Deep Well Dewatering for the Greater Cairo Wastewater Project — ROBIN B. DILL & MARK M. PETERSEN — 13
Pumping test deep well results can be applied to design modeling, provided the test represents the actual system and is performed at comparable pumping rates.

Design of the High Street Ramp, Boston — ABDOL R. HAGHAYEGHI & PETER J. QUIGLEY — 29
The challenges of a confined site for a temporary highway exit ramp were met by supporting several of its piers on the substructure of a nearby office tower.

The Design of a Suspension Bridge Anchorage System — WILLIAM R. HUGHES — 41
The use of a rock anchorage system with a redundant waterproofing scheme proved to be an economical and safe design solution that accommodated site conditions.

Electronic Toll Collection & Traffic Management in Italy — JOHN COLLURA — 55
An effective telecommunications system is a key to the successful implementation and operation of electronic toll collection and traffic flow management systems.

The Use of Simulation Software for a Power Plant Construction Project — REED W. NIELSEN & ARTHUR K. STOVER — 65
Computer simulation programs can be used in addition to historical methods of planning and field design for large-scale construction projects.

Reducing Seismic Risk in Massachusetts — STEVEN P. MCELLIGOTT, JAMES R. GAGNON & CHRISTOPHER H. CONLEY — 73
A program that evaluates the seismic risk of existing buildings is instrumental in developing structural modifications that will reduce seismic risk.

Advertisers' Index — 96

CIVIL ENGINEERING
OCTOBER 1993 VOLUME 63 NUMBER 10

SPECIAL ISSUE: ENVIRONMENT

FEATURES

ENGINEERING SUSTAINABLE DEVELOPMENT Can a strategy to evenly balance environmental preservation with economic growth save humanity from itself? The answer may depend on engineers. *By John Prendergast* — 39

KELLER CANYON FILLS A NEED Fast-tracked, environmentally sensitive design work won landfill site approval from regulatory agencies, the local community and environmentalists. *By Jill Shapiro and Lawrence H. Roth* — 44

HONG KONG'S WASTEWATER UNDERGROUND With nowhere else to go but down, engineers created a 100,000 m^3 cavern for a new wastewater-treatment plant 60 m below a hillside. *By Mike A. Oswell* — 48

A BETTER GRADE OF GRADE A new technique using geogrid reinforcement to create steep, natural-looking slopes solved grading problems at a Southern California hillside development. *By T. Ted Miyake, Garry Lay, Michael T. Peak and David L. Thielen* — 52

KEEPING CABLES CALM Unexpected cable vibrations on two cable-stayed bridges in Japan mystified designers. Their investigations resulted in solutions that may help other engineers. *By Benito M. Pacheco and Yozo Fujino* — 56

THE COPPER-CLAD LIBRARY Saddlebags and power bellies, tensegrity, and corrugated siding enrich the design vocabulary for the new Central Library in Phoenix. *By Rita Robison* — 61

WHOSE RISK IS IT ANYWAY? An EPA project manager takes a look at risk issues affecting residents of Aspen, Colo. *By Brian Pinkowski* — 66

RUNOFF AS A RESOURCE A philosophy known as best management practices considers storm water a precious commodity, not a problem. *By Jamil F. Bou-Saab* — 70

EXCHANGING WASTES A little innovative management solved the waste problems of a sewage district, hazardous-waste landfill and public landfill. *By Larry N. Hughes* — 72

SLIP-LINING SOLUTION Grouting the annular space between a slip lining and a deteriorated pipe can be tricky. Engineers had to stop work on a problem rehabilitation project but were able to complete the job on time. *By Dennis P. Sullivan* — 74

Journal of
Urban Planning and Development

Volume 119 Number 3 September 1993

SPECIAL ISSUE: SUCCESFUL LAND DEVELOPMENT: MANAGING AND PAYING FOR GROWTH

EDITORIAL v

TECHNICAL PAPERS

Hawaii: Growth, Government, and Economy.
Wright Hiatt 97

Growth Management in the City of San Diego: Planning the Future Now.
Randi F. Coopersmith, Richard L. Miller, and Christopher J. Morrow 116

Housing Linkage Fees: Lessons for Los Angeles.
Paul A. Novak 125

Commercial Growth Management Techniques in San Francisco.
Katherine H. Crocker and Dawn K. Haeckel 137

DISCUSSION

Positive Influence of Impact-Fee in Urban Planning. A. C. Nelson, J. E. Frank, and J. C. Nicholas.
By Farnum W. Kerr 152

CONTENTS

Jane's Airport REVIEW
Incorporating *Aviation Ground Equipment Market*
ISSN: 0954 76 49 OCTOBER 1993

NEWS

AIRPORTS
Peace brings dividends to airports; Dangerous cargo rules to change; Belfast the next to go private. 3

September proves a bad month for US; GPS arrives on the ramp. 5

Airport development. 6

ATC
Germany doubts TCAS suitability; ODS decision announced. 9

ATC contracts. 10

INDUSTRY
Airports divided on privatisation. 13

Industry contracts. 14

NEW PRODUCT REVIEW
ATC; ramp equipment; terminal systems. 17

AIRPORTS

CHINA
Airlines seek take-off points 21

US FUNDING
The politics of PFCs 25

CARGO
Tighter security brings new paperwork burden 27

CONFERENCE
ACI-NA meets in Nashville 32

CONSULTANCY
Treat aircraft like trains 35

Software aids efficiency 38

ATC

DIGITAL DATALINKS
Satellites offer real Mode-S datalink alternatives 43

VHF COMMUNICATIONS
The turbulent airwaves 46

BUYER'S GUIDE

EQUIPMENT
A Buyer's Guide to chassis, engines and motive batteries for specialist airport vehicles 47

INTERVIEW

ACI-NA PRESIDENT
George Howard 48

COMMUNICATION ARTS

FEATURES

42 PETER HAYTHORNTHWAITE
This New Zealand graphic/industrial designer has a multidisciplinary practice.
By Wei Yew

52 JOHN HUET
Boston-based Huet is quickly building a reputation as a premiere sports photographer.
By Larry Frascella

62 CITRON HALIGMAN BEDECARRÉ
The latest San Francisco advertising agency success story.
By Maxwell Arnold

72 ALEXANDER ISLEY DESIGN
This New York designer manages to inject humor into his work for a variety of clients.
By Warren Berger

82 BILL MAYER
A versatile Atlanta-based illustrator with a penchant for strange creatures.
By Allen Rabinowitz

90 CLIENTS AND DESIGNERS
Los Angeles artist/designer April Greiman and the Southern California Institute of Architecture.
By Ellen Shapiro

101 ECO
A newsletter insert on environmental issues for visual communicators
Designed and edited by Eva Anderson

105 EXHIBIT
Reproductions of the latest and best in visual communication from here and abroad.

Volume 35, Number 5

IVHS AMERICA

An Official Publication of the Intelligent Vehicle-Highway Society of America

Volume III Number 11 • November 1993

REGISTER NOW FOR 4th ANNUAL MEETING APR.17-20 IN ATLANTA

Coordinating Council Calls for Focus on IVHS Outreach

The IVHS AMERICA Coordinating Council, meeting last month in San Francisco, called on IVHS AMERICA's members and leadership to place IVHS public education, information, and outreach among the society's top priorities.

The Council vowed to keep public outreach in the forefront of its deliberations.

Council Chair Dick Braun said, "This is so important that the leadership of IVHS AMERICA — and its entire membership — need to get personally involved in the outreach effort. Now."

He said. "This issue is so important that it will be a standing agenda item for every Coordinating Council meeting as long as I chair the Council."

The Council also changed the name of IVHS AMERICA's Public Education and Outreach Task Force to Public Education, *Information*, and Outreach Task Force to reflect IVHS AMERICA's commitment to hearing as well as disseminating information about IVHS.

The Coordinating Council coordinates technical committee activities and coordinates those activities with the programs of other agencies, organizations, and interest groups. The Council establishes, organizes, and oversees the committee activities.

IVHS AMERICA in 1992 adopted a Nationwide Public Education and Outreach Program to provide public information about IVHS, and to reach out to groups and markets that were interested in or likely to be affected by IVHS deployment. The society established the Public Education and Outreach Task Force with John Stearns, president of Navigation Technologies of Sunnyvale, Calif., as chair.

The task force named sub-groups to pursue such activities as developing an IVHS videotape, implementing a news media program, outreach planning, assessing the current state of IVHS public information efforts in the industry, and distributing a series of IVHS columns to community newspapers.

Of the Coordinating Council call to action, Braun said:

"The biggest challenge to development and deployment of intelligent vehicle-highway systems in the United States is no longer technological. We have much of the technology now, readily convertible from defense, space, and the computer, control, and communication industries.

PREPARE THE MARKETPLACE

"The biggest challenge is to prepare the marketplace. We need to reach out to state and local government officials and the corporate world, the people who will make the key decisions about deploying IVHS, and to transportation consumers, the people who drive the cars and ride the buses.

"These are the people we need to reach, to let them know about the ability of IVHS to solve pressing congestion, environment, and safety problems. It's not enough for us to know about these solutions. We have to let Americans across the board know."

The outreach task force held its organizational meeting in April 1993 at the IVHS AMERICA Annual Meeting in Washington. It met again in October in San Francisco, in conjunction with the Coordinating Council meeting.



Braun

IVHS AMERICA has initiated a number of outreach programs, including:

- Regional meetings — At the request of the FHWA, IVHS AMERICA will conduct up to ten regional meetings nationwide to involve more state and local government agencies and other audiences in IVHS deliberations. Many government officials are unable to travel long distances to centralized meetings. (See story, Page 4)
- Speakers bureau — IVHS AMERICA operates a busy Speakers Bureau, placing members and staff speakers before various audiences presenting IVHS programs. So far in 1993, the Speakers Bureau has fulfilled more than 50 engagements. Contact for groups seeking speakers, or members wishing to participate in the Speakers Bureau, is Mary Anne O'Hare, 202/973-7870.

(See Outreach, Page 4)

Insert: Congress Passes IVHS Appropriations Bill



The Newspaper of Information Systems Management
November 1, 1993 Vol 27, No. 44, 100 Pages, $6/Copy, $68/Year

COMPUTERWORLD

Microsoft casts object net

NT to one-up Novell's NDS with transparent data access

By Elisabeth Horwitt

Microsoft Corp. revealed new details last week of the object-oriented services environment with which it hopes to leapfrog Novell, Inc.'s NetWare Directory Services. The environment will provide users with transparent and dynamic access to data, images and services across the enterprise.

The system is part of Microsoft's Cairo object extensions to NT, which is slated to ship sometime in 1995, Microsoft spokesmen said.

"This is a quantum leap over existing global directories such as NetWare Directory Services, which still require users and applications to comprehend the network's functional and logical design to locate a resource, said Claude King, senior systems analyst at the University of Florida's College of Journalism and Communications in Gainesville.

Building access

In contrast, Cairo will allow the user to build access to a given piece of data, graphic or service into an application so it can be called up at the click of an icon, King said.

Such items are assigned monikers, which an application would always use to call an object, independent of where and on what type of system it resides, said Lyle Griffin, vice president of advanced technology at Micrografx, Inc., a Richardson, Texas, software company.

Microsoft will continue to use the domain-based system it now employs for directory searches so a moniker would be valid within a domain but might change between domains, he added. However, the moniker's attributes, such as a database or a network protocol needed to access the objects, could change.

As a result, applications always access key items in the same way, even if they have been

Microsoft, page 14

SOUNDOFF!

Buonincontri

Kruse

Are foreign programmers stealing U.S. jobs?

Yes, says Louis Buonincontri, an American contract programmer who's been burned. But Steven Kruse, who hires out offshore workers, says those coders are a boon to the global economy.

For more on the debate see In Depth on page 122

IBM gives OK to NT on PowerPC

By Ed Scannell and Michael Fitzgerald

IBM this week will grudgingly announce support for Microsoft Corp.'s Windows NT on the PowerPC.

The move appears to be a concession to NT's market potential and its ability to undermine OS/2 and WorkPlace OS.

The acknowledgment of NT gives IBM's Personal Software Products group one more thing to worry about in its uphill battle against Microsoft for the hearts and pocketbooks of corporate users.

The announcement also comes at a particularly crucial time for OS/2. For the first time since its inception, the operating system appears to be gaining sales momentum on Intel Corp. platforms (CW, Oct. 18).

NT support on the PowerPC may primarily hurt IBM's emerging WorkPlace OS, a microkernel-based environment that will enable the PowerPC to run OS/2, AIX and Windows applications. The move will have minimal impact on OS/2 2.1, which currently works only on Intel platforms.

DELIVERY DATES FOR OPERATING SYSTEMS THAT RUN ON IBM'S POWERPC

AIX
CURRENTLY AVAILABLE

WORKPLACE OS
FIRST HALF OF 1994

WINDOWS NT
FIRST HALF OF 1994

APPLE SYSTEM 7.X
FIRST HALF OF 1994

WorkPlace OS is scheduled to debut on the PowerPC in the first half of 1994. IBM hopes to show off what would be the first beta release at Comdex/Fall '93 this month.

But due to some technical snags, Personal Software Products may not be able to deliver the beta release until the first quarter of next year, pushing delivery of a final product to around mid-1994.

IBM will work with Motorola, Inc. to port Windows NT to its PowerPC-based systems. How long it will take the two companies to complete the port is not clear, although most analysts said they suspect it will be available in the first half of 1994.

While IBM officials continue to say they are not sure just how sure-

IBM, page 16

Enterprise security on deck

By Joanie M. Wexler

A trailblazing effort is afoot to put corporate America on a path to secure its data cohesively across distributed computing environments.

Next week, a fledgling group at Hughes Aircraft Co. will kick off what appears to be the first comprehensive crack at a centralized security scheme for network-based computing, according to sources close to the company.

The U.S. Department of Defense contractor is drawing on its weighty expertise in using stringent DOD standards to bulletproof its own computers and networks.

It is poised to deliver the first in a series of products that collectively protect desktop and networked data.

The official announcement of the plans, which the company confirmed, is scheduled for the Computer Security Institute Show in Anaheim, Calif., this week.

The product is already in use at a number of unidentified government agencies and is in beta testing at some unidentified corporate sites, sources said.

The idea behind the initiative is to combine the various functional levels of security, which exist today largely as piecemeal products, into a cohesive software package that eventually

Security, page 8

COMPUTER SECURITY

Aside from Unix, Windows NT is the only desktop operating system with plans to integrate the government's Class C2 security scheme.

Newspaper

```
88X88JFT888888 CAR-RT SORT 88 CR98
88AT2PR/10T0091608 FEB1395 0010105247
                                  88  3642
STATE TRANS LIBRARY
10 PARK PL2
BOSTON              MA  02116
```

Patent office eyes industry aid in vast database plan

By Gary H. Anthes

In a bold experiment in government/industry collaboration, the U.S. Patent and Trademark Office plans to sponsor development of an advanced text search and retrieval system for use by itself, other federal agencies and commercial enterprises.

A number of vendors, including IBM, Oracle Corp., Software AG of North America, Inc., Electronic Data Systems Corp. and Thinking Machines Corp., have expressed interest in supplying the system. Oracle has submitted an unsolicited proposal, patent officials said.

The patent office is looking for a system able to offer subsecond response to complex queries against terabytes of text data using massively parallel computers. In addition, the system must be able to filter and tailor data to minimize the amount of unwanted informa-

Patent, page 12

Data dilemma

With 1.7 million of its patents now accessible on line, the U.S. Patent and Trademark Office is hoping to make its documents accessible through a single system.

INCOMPATIBLE DATABASES

2.4M — FULL TEXT FILES

+

5.6M — IMAGES

+

2,000 — NEW DOCUMENTS PER WEEK

=

TOTAL PATENTS — UNIVERSAL ACCESS SYSTEM

Business Reports

pc trans
Fall 1993 Issue

WATER
Engineering & Management
Vol. 140, No. 10

October 1993

contents

features
19 The Electronic Quill—Pen Systems in Civil Engineering
23 How to Document Worksheets

bootstraps
12 Climbing into Windows

leading edge
14 AutoDESK Bridges Gap Between CAD and Visualization—Part II

tech file
16 DOS 6—Is it for You?

reviews
25 QRS II for Windows
26 Automated Transportation Management System (ATMS)
29 Sample Size Estimate

departments
4 Calendar Notepad
5 News Briefs
8 Program Notes
30 Software Listing
35 Order Form

FEATURES

Sewage Sludge Incineration Under Part 503B
The fourth article in the series covering the 40CFR Part 503 sludge disposal rules deals with incineration practices and possibilities 22

Groundwater Contamination—Prevention Still the Best Medicine
Detection, identification and treatment technologies for groundwater contamination are well developed and available—but prevention often is the best solution to the problem 24

Consultants Rate Market Trends, Selection Methods
WEM's latest survey of consulting firms gets answers on market and technology trends, the bidding process, and how engineering services are selected 26

Wastewater Process Lives Up To Early Promise
Six years after an initial WEM article described an innovative wastewater clarification system, a second summarizes its successful track record over that period 28

Consumer Reports



643

IN THIS ISSUE

October 1993 Volume 58, No. 10

627 **Homeowners insurance**
How to get the best protection at the best price. Ratings of 24 insurers.

637 **Dishwashers**
The best combined high performance with low energy use.

643 **Chocolate-chip cookies**
Some packaged ones were nearly (but not quite) as good as homemade.

649 **ENERGY-SAVING ROUNDUP**

650 **Weather stripping**
Which types block drafts best around doors and windows.

653 **Exterior caulks**
Some hold up better than others. We tested 27 brands.

656 **Energy-saving thermostats**
The best tested provide tight control and are the easiest to program.

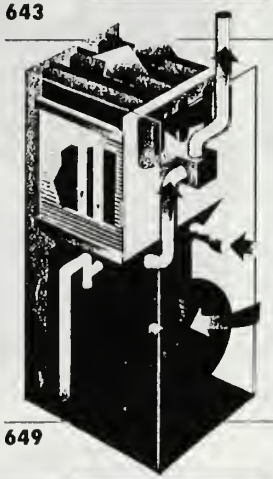
660 **Furnaces: Upgrades & replacements**
How to choose a new, high-efficiency furnace.

662 **Heat pumps**
A close look at these heaters cum air-conditioners.

664 **Replacement windows**
Energy-saving options in windows, with Ratings of 14 major brands.

668 **The high price of prescriptions**
Why drugs still cost too much—and why the uninsured get hit hardest.

677 **Road test: Four sporty cars**
Chevrolet Camaro V6, Pontiac Firebird Trans Am, Mazda MX-5 Miata, and Honda Civic del Sol Si.



649



677

DEPARTMENTS

MEMO TO MEMBERS	623	RECALLS	684
LETTERS	624	BRANDS: WHERE TO CALL	684
ONCE OVER	625	MOVIES	685
A QUESTION OF HEALTH	636	INDEX AND FAX NUMBERS	686
POCKET GUIDE TO MONEY	648	SELLING IT	687



IN FUTURE ISSUES

Home work In the November issue, we rate notebook computers and fax machines suitable for a home office.

Autos Cadillac Seville STS, Infiniti Q45a, Jaguar XJ-6, Lexus LS400 **Home** Washing machines ■ Breadmakers ◨ Gas ranges ◨ Electric drills **Gear** Tiny TV sets ■ Rack stereos ◨ Recommended stereo components **Leisure** Home gyms ■ Color print film ■ SLR cameras **Foods** Soups ◨ Bread ◨ Butter & margarine

Printed in U S A



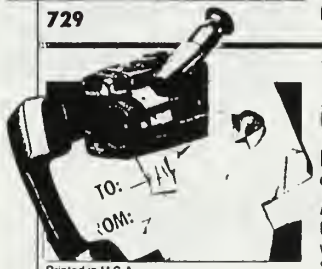
695



716



729



Printed in U S A

IN THIS ISSUE

November 1993 Volume 58, No. 11

695 **Soup's on**
Taste-tests of 49 chicken noodle, vegetable, and tomato soups.

700 **Selling life insurance to the elderly**
Everyone from the Gerber baby to Ed McMahon is pitching "final expense" policies. Most are poor buys.

704 **The new tax law and you**
A roundup of the major changes, with tips for cutting your tax tab.

706 **Washing machines**
Update on four good top-loaders, plus two front-loaders.

711 **How to get the best photos**
Do you need to spend a lot for color-print film?

716 **Notebook computers**
Detailed buying advice, plus Ratings of leading models.

722 **Fax machines**
They're an office mainstay. What about low-priced models for the home?

729 **Home gyms**
We pushed and pulled with 10 machines built for use at home.

736 **Anatomy of a hospital bill**
Details help explain how hospitals contribute to high health-care costs.

740 **Toxic solvents**
How to cut the risks from solvents in ordinary household products.

744 **Road test: Luxury sports sedans**
Lexus LS400, Infiniti Q45a, Cadillac Seville STS, Jaguar XJ6.

DEPARTMENTS

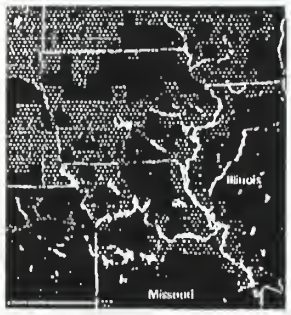
MEMO TO MEMBERS	691	A QUESTION OF HEALTH	743
LETTERS	692	BRANDS: WHERE TO CALL	752
ONCE OVER	693	MOVIES	753
POCKET GUIDE TO MONEY	702	INDEX AND FAX NUMBERS	754
A QUESTION OF MONEY	735	SELLING IT	755
RECALLS	738		

IN FUTURE ISSUES

Best Buy Gifts For December, our annual holiday roundup of products that did well in recent tests.

Autos Chevrolet Caprice Classic, Ford Crown Victoria, Chrysler LHS, Pontiac Bonneville **Personal** Perfumes **Home** Bread makers ■ Electric drills ■ Food wraps **Audio/video** Tiny TV sets ■ Rack stereos ■ Stereo components **Leisure** SLR cameras ■ Pocket knives **Foods** Bread **Health** Alternative medicine

GIS WORLD
VOL. 6 NO. 10 The World's Leading Geographic Information Systems Publication OCTOBER 1993



Page 28 GIS and related technologies were valuable allies during recent flooding in America's Midwest.



Page 30 Computer technology advances are expanding the GIS industry.



Page 48 GIS professionals should incorporate basic cartographic skills into mapping projects

FEATURES

28 **Vendor/Agency Cooperation Assists Flood Relief**
By GIS WORLD Staff

30 **Hardware '93**

30 **GIS Hardware Gets Better, Faster and Cheaper**
By Eric J. Strand

34 **Innovative Technologies Enrich Data Collection/Conversion**
By Kevin Corlis

36 **CD-ROM Feeds GIS Data Appetite**
By John C. Cartwright

39 **Hardware Vendors Assess Industry Issues**

46 **Monodigitizing: Make the Photograph Match the Map**
By Ward W. Carson

48 **Modern Cartography Plays Essential Role in GIS**
By Amy L. Ahner

GIS NewsLink

9 GIS Used to Coordinate World Youth Day
9 WorldMap Satellite Consortium Releases Imagery
9 GIS Used for Loan Discrimination Study
9 NPS Vegetation Mapping Project Awarded
10 Magnavox Provides GPS for Airport Incursion Trails
10 GeoSystems Announces Newton Application
10 USGS Releases Interactive Educational System
10 PlanGraphics Acquires Infrastructure Management Solutions
11 Teachers Sharpen Geography Teaching Skills
11 Business Geographics Growth Leads GIS Market
11 European Mapping Agencies Initiate Joint Efforts
11 1994 Sourcebook to Be Shipped This Month
12 GIS Used in Open Skies Treaty
12 Japanese Data Available
12 Silicon Graphics Reports First Billion Dollar Year

GIS Federal Connection

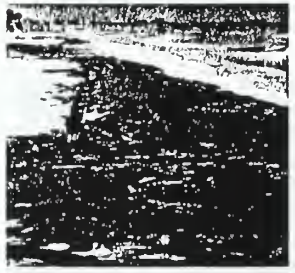
14 ALMRS Update
14 Forest Service Announcement Scheduled
14 FGDC Hosts Atlanta Meeting
14 DOQ Procurement Slated
14 Mapping Software Assists Postal Service Program

GIS Conference Connection

15 AM/FM Executive Symposium Hits Attendance High
15 Autocarto 11 and GIS/LIS '93 Scheduled
15 URISA Held in Atlanta
15 GIS World Holds Advanced Course
16 Canadian IVHS Conference Scheduled
16 ESRI to Hold European User Conference
16 MapInfo Reseller and Developer Conference Planned
16 Regional ARC/INFO User Conferences Slated
16 Spanish Workshop on Automated Cadastral Cartography Set
16 CDE Conference to Facilitate Integration
17 Applied Geography Conference to Address Retailing

Copyright GIS World Inc 155 E Boardwalk Drive Suite 250 Fort Collins CO 80525, USA

GIS WORLD
VOL. 6 NO. 11 The World's Leading Geographic Information Systems Publication NOVEMBER 1993



Page 30 The question of whether GIS can contribute to oil spill management was answered in Tampa Bay.



Page 34 GIS software is getting better than ever.



Page 48 A pilot GIS study enhances water use equity.

FEATURES

30 **GIS Tackles Oil Spill in Tampa Bay** *By Christopher Friel, Timothy Leary, Henry Norris, Robert Warford and Bill Sargent*

34 **GIS Software Trends Improve Industry Offerings**

36 **Digital Image Databases Support GIS Operations**
By Thomas W. Lenzen and Timothy W. Foresman

40 **Open Systems Mean "Open Sesame" for the GIS Community** *By Peter L. Croswell*

43 **Object-Oriented Approaches Add Value to GIS**
By Donald A. Jameson

48 **GIS Assesses Water Use Equity** *By Susanne Strater*

52 **GIS Point/Counterpoint**

52 **Point: Treat GIS Data As a Commodity** *By David Rhind*

56 **Counterpoint: Avoid the Evils of Full Data Cost Recovery**
By Nigel Waters

58 **GIS Eases Arms Control Assessments**
By Glen Johnson, William Malzahn and David Round

GIS NewsLink

9 GeoVision Placed in Receivership
9 Autodesk Announces AutoCAD Data Extension
9 Ultimap Files Chapter 11 Proceedings
9 "Information Highway" Prototype Nears Completion
10 Transportation GIS Market Expanding
10 Longman GeoInformation Wins Bids
10 Silicon Graphics Joins Nintendo
10 National Geographic Spreads Geographic Literacy
10 UNIX Unification Specification Released
11 GPS Constellation Benefits Earth Science Projects
11 Datatech Offers 1994 Predictions
11 Magnavox Unveils New Identity Program
11 NCGIA Offers Research Funds
11 Colorado Database Available
12 Students Track Ship's Path
12 Digital European Street map Database Created
12 GPS Aids Somalian Relief Effort
12 Executive Information System Gains Mapping Capabilities

GIS Federal Connection

14 NAVFAC Contract Winners Named
15 ALMRS Update
15 USGS News
15 Restructuring Under Way
15 Joint Mapping Efforts Expanded
15 DOQ Contract Awarded
16 Project 615 to Be Awarded Next Month
16 NSDI Discussions Set for GIS/LIS
16 IVHS: Difficult in any Language?
16 Landsat 7 Open Forum Held
16 FGT '94 Agenda Set

GIS Conference Connection

17 Genasys Users Meet
17 SPOT Image User Meeting Planned
17 Pecora 12 Symposium Focuses on Land Information
17 Marine Remote Sensing Conference Announced
17 Japanese Join Worldwide IVHS Movement
18 First AGIC Conference Meets Goals
18 TSU Conference Slated
18 IWGIS '93 Held in China
19 ASTM Symposium Announced
19 Maryland Committee Meets
19 Multi-Media Modeling Event Scheduled

Copyright GIS World Inc 155 E Boardwalk Drive Suite 250 Fort Collins CO 80525, USA

HispanicBUSINESS®

October 1993 Volume 15, Number 10



Now that Hispanics are 10 percent of the population, "you're talking serious discretionary income," says PR woman Patricia Perez. **6**



Xavier Suarez of Miami is one of 35 Hispanic mayors grappling with the economic challenges facing today's municipal leaders. **28**



Jorge Mas Canosa remains the country's most generous Hispanic when it comes to winning the influence of Washington lawmakers. **20**

COVER STORY
AT THE HEAD TABLE NOW **38**
Bill Richardson is a new power player in the Democratic Party.

THE 100 INFLUENTIALS **42**
The nation's opinion leaders identify the issues. The next step is action.

PICTORIAL
OFF TO COLLEGE THEY GO **16**
Four students take home $10,000 in Hispanic Student Scholarship Contest...

WASHINGTON
THE D.C. CASH FLOW **20**
Political contributions are diverse, but Cuba is the number 1 draw.

AGENDAS
WHAT'S A MAYOR TO DO? **28**
Politicians act like entrepreneurs to champion small business.

POPULATION
MARKING A MILESTONE **6**
For the first time, one of 10 Americans is Hispanic.

POLITICS
WHO IS AL VILLALOBOS? **72**
L.A.'s new deputy mayor for economic development is in the spotlight.

VENDORS
LITTLE NUMBERS THAT MEAN A LOT **78**
How can you miss a chance for higher sales? Don't update your SIC code.

VENTURES
GETTING A PIZZA THE ACTION **78**
Mexico unleashes franchise fever. Will benefits flow north of the border?

DEPARTMENTS

Direct Line 4
Washington Insider 14
Business Notes 82
Career Track 84
About People 86
Mexico Update 88
Census Insights 90
Media Marketing 92

Cover

Congressman Bill Richardson emerged from a tough battle for a position in the Clinton Administration to become one of the nation's most influential Hispanics. Cover photo by Jeff Watts

CONTENTS

JOURNAL OF THE AMERICAN PLANNING ASSOCIATION

Autumn 1993

Volume 59 • Number 4

ARTICLES

Issues in the Design of Locally Sponsored Home Ownership Programs 417
Michael A. Stegman and Michael I. Luger

The City of London Walkway Experiment 433
Michael Hebbert

Racism and Planning 451
Charles Hoch

The Spatial Effects of Land Use Regulations: A Missing Link in Growth Control Evaluations 461
Eran Feitelson

Groundwater Contamination: Its Effects on Property Values and Cities 473
G. William Page and Harvey Rabinowitz

DEPARTMENTS

THE LONGER VIEW
The Last Longer View
As the World Turns 411
Peter D. Salins
Stop the World . . . and Look What Planners Can Do 413
Eugenie L. Birch

COMMENTARY AND COUNTERPOINT
Toward a Non-Euclidian Mode of Planning 482
John Friedmann
A Quantum Response to Non-Euclidian Planning 485
Sam Casella
The More Things Change 486
Daniel Lauber

PLANNER'S NOTEBOOK
Conservation Easements: An Analysis of Donated Development Rights 487
John B. Wright

LETTER TO THE EDITORS 494

BOOK REVIEWS
From the Book Review Editors 496

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 9
September 1993

Contents

Articles

13 **Post-Calibration Adjustment of Travel Demand Models**
By Anthony A. Saka
It is necessary to adjust travel demand models to reflect socioeconomic changes and community growth and expansion.

19 **A Recommended Practice: Guidelines for Residential Street Design**
By ITE Technical Council Committee 5A-25A
This is a summary of the recommended practice, which updates the recommended practice approved by the Institute in February 1993.

21 **Demand Management Implementation in Southeast Asia**
By Yordphol Tanaboriboon
Attempts to alleviate severe traffic congestion in Southeast Asia have so far been inadequate. Both successes and failures are demonstrated in a comparison of demand management techniques in Singapore and Bangkok.

31 **Capacities of Multiple Left-Turn Lanes**
By ITE Technical Council Committee 5P-5
This is a summary describing the results of a study of the capacities of multiple left-turn lanes and the roadway geometric features that influence the capacity of such facilities.

33 **Establishing Successful Career Guidance and Student Chapter Programs**
By Nazir Lalani and Maria Laura Musso-Escude
The Institute's District 6 and the student chapter at the University of Washington have implemented successful programs and activities for career guidance and student involvement in the transportation profession.

38 **Overhead Infrared Vehicle Sensor for Traffic Control**
By Tarik M. Hussain, Tarek N. Saadawi and Samir A. Ahmed
This article describes the development, design and experimental testing of a new system using laser technology for vehicle detection.

News

11 **ITE News**
Harold F. Hammond Scholarship • Transportation Management Conference

12 **Washington Report**
2.5 Cent Gas Tax to Trust Fund • Appropriations Fight in House • EPA Updates Guidelines on Models • PBS Program • Eisenhower Interstate System

Departments

4 **Calendar**

6 **To the Editor**

46 **Research Bulletin**

48 **Professional Services Directory**

55 **Positions**

62 **Advertisers Index**

On the cover: Yonge Subway north to Eglinton Avenue, Toronto, Canada. Photo by Paul R. Hill.

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 10
October 1993

Contents

Articles

19 **An Equipment Standard: Specifications for Retroreflective White and Yellow and Black Hot Applied Thermoplastic Marking Materials**
By ITE Technical Council Commitee 7S-2A
This is the summary of an Equipment Standard approved by the Institute in January 1993.

20 **Urban Transient Population Trip Research**
By Xuguang Wen
Large percentages of urban transient population in cities have a significant impact on trip volume, as demonstrated in certain areas in China.

24 **Do Advance School Flashers Reduce Speed?**
By Gian C. Aggarwal and Stacey L. Mortensen
Traffic engineers show extreme caution when planning safe school crossings. This article explores some alternative safety measures for school zone areas.

35 **Trip Generation: One Developer's Experience**
By Sheldon Schumacher
The author uses several projects to analyze trip generation characteristics that demonstrate the need for functional adequacy when developing sites.

44 **A Proposed Equipment Standard: A Model Performance Specification for the Purchase of Preformed Plastic Pavement Marking Materials**
By ITE Technical Council Committee 7S-2B
This is the summary of a report approved by the Institute in June 1993.

News

11 **Washington Report**
Options for Conversion to Metric Signs • Date for Rules on ISTEA Management

12 **ITE News**
Annual Meeting Wrap-Up

Departments

4 **Calendar**

8 **To the Editor**

46 **Elections to the Grade of Fellow**

47 **People and the Profession**

49 **Professional Services Directory**

56 **Positions**

62 **Advertisers Index**

On the cover: A two-way bicycle route in The Hague, The Netherlands, site of ITE's 63rd Annual Meeting.
Photo courtesy of The Ministry of Transport Public Works and Water Management Directorates-General for Public Works and Water Management Transportation and Traffic Research Division.

Journal of

Transportation Engineering

Volume 119 Number 5 September/October 1993

EDITORIAL 665

TECHNICAL PAPERS

Assessing Potential for Superhub Airport for California.
Terry A. Ruhl, Manuel Romana, Robson F. Ramos, and Christopher Spidle 667

Distributed Air-Traffic Control. I: Theoretical Studies.
Nicholas V. Findler and Ron Lo 681

Distributed Air-Traffic Control. II: Explorations in Test Bed.
Nicholas V. Findler and Ron Lo 693

Risk and Capacity Impacts of ATC Separation Rules.
John A. Stewart and John H. Shortreed 705

Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions.
P. R. Stopher 723

Risk-Based Bridge Management.
M. Cesare, J. C. Santamarina, C. J. Turkstra, and E. Vanmarcke 742

Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes.
Parviz A. Koushki, Louis F. Cohn, and Abdurrahman A. Felimban 751

Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints.
Chidambaram Channakeshava, Fariborz Barzegar, and George Z. Voyiadjis 763

DISCUSSIONS

Field Test of 72-in. Diameter Cast-in-Place Nonreinforced Concrete Pipe. Curtiss W. Gilley, Lester H. Gabriel, and Robert S. Stanley.
By Morgan Johnson. By Robert C. Prevost. Closure by authors 784

Identification of Inappropriate Driving Behaviors. John M. Mason Jr., Kay Fitzpatrick, Deborah L. Seneca, and Thomas B. Davinroy.
By Kenneth Todd. Closure by John M. Mason Jr. and Kay Fitzpatrick 790

METRO Magazine

a bobit publication — serving surface mass transportation for 89 years

SEPTEMBER / OCTOBER 1993

Vol 89 No 5

Features

L.A., Transit Lab to the World, Carves a Niche in Region's Psyche — 34
People begin to think transit in the home of the car culture. Plan to spend $163 billion for intermodal self-sufficiency, if successful, will change a way of life. But the experiment has just begun.

The Bus of the Future, Part 2: A Pragmatic Step Forward — 60
While some groups are out to revolutionize the transit bus and bus-making, those with the most bus-building experience prefer to reach for more evolutionary goals.

***METRO's* Top 100 Transit Bus Fleet** — 69
Exclusive survey finds permanency in U.S.-Canadian fleet.

Executive Dialogue: Unlocking Transit's "Dream Market" — 85
Mark Obert, president and COO of General Automotive Corp., has a plan for bringing U.S. transit bus technology to Asia.

***METRO's* Exhibit in Print** — 90
Products and services to be seen by upwards of 15,000 visitors to APTA's International Public Transit Expo '93 in New Orleans in October are previewed.

NJ Transit, Amtrak Evolve Signal System for Northeast Corridor — 114
New cab signal codes developed for heavy train traffic. Code rate reserved for future superclear aspect to be used by 150 mph. trains.

Strategies for Managing Juice — 123
Experts discuss how some transit agencies are even able to become sellers of electricity.

Private Bus Companies Prepare To Make Their Vehicles Accessible — 127
ADA also means terminals, offices, hiring must accommodate the disabled. Here's what you can do to prevent problems.

Meet *METRO's* Editorial Advisory Board — 130
These experts representing a broad cross-section of industry experience and expertise comprise the first board of editorial advisers in the magazine's 89-year history.

Has Federal Transit Funding Peaked? — 133
Conceding that Reagan's fiscal policies may still be with us, Congress is not likely to go along with Clinton's transit proposals.

Restraining Wheelchairs Has Departed From the Dark Ages — 136
ADA spawns awareness of keeping disabled passengers safe. Transit, private buses and passenger rail deal with wheelchairs.

For the Compleat Transit Bookshelf: Some Reading Both Light and Heavy — 138
A primer on U.S. transit buses starts with Benz's 1895 model. Changing links between politics and transit are explored.

34



L.A. spends $163 billion on transit.

GOVERNING

OCTOBER 1993 / VOLUME 7 NUMBER 1

TRENDS

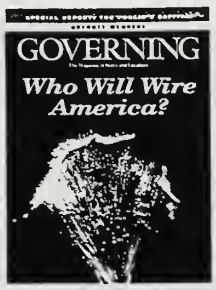
20
Databases vs. Deadbeats
By Nadine Cohodas
States are going after child support owed by delinquent parents with a vengeance—and the help of new technology.

22
How to Secede
By Elizabeth Niendorf
Breaking up may still be hard to do, but local secession campaigns are springing up in an increasing number of places.



24

24
The Lonely Firehouse
By Charles Mahtesian
Busy commuter lifestyles have made it difficult to recruit and retain volunteer fire fighters, especially in suburban areas.



ON THE COVER: The future is now. Fiber-optic cable is revolutionizing telecommunications in America.

FEATURES

26
Wiring the Country
By William Fulton and Morris Newman
Fiber-optic telecommunications is about to become America's leading growth industry. Where does government fit into the picture?

32
Walls That Unite
By Anne Jordan
Blocking off neighborhood streets to outside traffic can help restore feelings of community. In the best circumstances, it can also reduce crime.

36
Conventions and Correctness
By Charles Mahtesian
When they fall victim to a political boycott, states and cities face losing not only tourism revenue but public repute.

GOVERNING SPECIAL REPORT

THE PUBLIC'S CAPITAL

43 The effects of free trade on public works, plus congestion-pricing strategies and the pros and cons of a national infrastructure corporation.

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on two generations of black mayors.

10
Dialogue
Letters from readers, and an Essay by Neal Peirce.

13
Connections

14
Network



14

60
Finance
Competing states know no limits on spending to attract new jobs.

62
Environment
When it comes to air quality, some cars are worth more in the junkyard.

64
Technology
Cellular phones create new problems—and solutions—with regard to privacy.

68
Clinton and the Country
The states' reaction to health care reform may hinge on an acronym: ERISA.

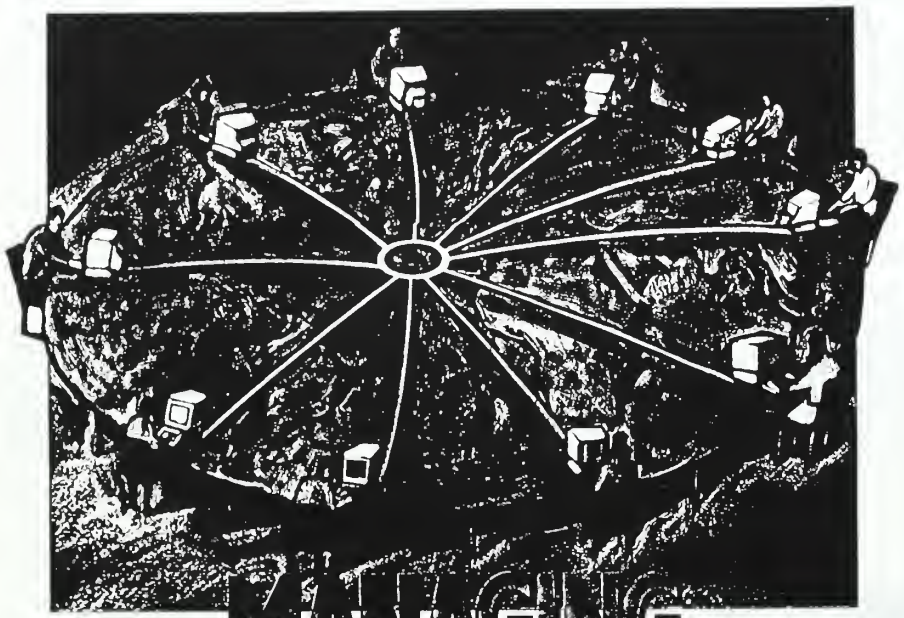
Cover photograph by Greg Pease/Tom Stone Images

A ROAD MAP TO BETTER UNDERSTAND YOUR FINANCIAL REPORT 39

The American Management Association Magazine | OCTOBER 1993 $5

Management Review

STATE TRAIN



MANAGING TECHNOLOGY

Letitia Baldrige Meets the Manager 18

Thumbs Up/ Thumbs Down On Layoffs 29

Make Your Annual Report Work Harder 52

How to Evaluate Foreign Partners 59

mlr
Monthly Labor Review

October 1993
Volume 116, Number 10

Deborah P. Klein, *Editor-in-Chief*
Robert W. Fisher, *Executive Editor*

Articles

3 **Employment change and sectoral distribution in 10 countries, 1970–90**
Growth was fastest in North America and Australia, reflecting primarily their more rapid population increases
Todd M. Godbout

21 **Job-related education and training: their impact on earnings**
Qualifying training and training to improve skills play different roles in the workplace, but both contribute to greater earnings
Alan Eck

39 **Fatal work injuries: results from the 1992 national census**
For the first time, nationwide information is available; highway accidents and homicides top the list of fatalities
Guy Toscano and *Janice Windau*

49 **Injuries and illnesses among bituminous and lignite coal miners**
The preponderant categories are sprain, contusion, cut, fracture and 'dust diseases of the lungs'
Jack Reardon

Reports

56 Japan's low unemployment: a BLS update and revision
Sara Elder and *Constance Sorrentino*

63 Trends in job search methods, 1970–92
Michelle Harrison Ports

67 Workplace partnerships in the United States and Europe
Henry P. Guzda

Departments

2 Labor month in review
56 Research summaries
73 Major agreements expiring next month
74 Developments in industrial relations
79 Book reviews
83 Current labor statistics

October 1993
Vol. 32, No. 9

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

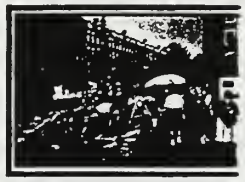
FEATURES

SPECIAL FOCUS: REVITALIZATION

20 **Industry Forum** *Rich Parker*
Parking industry needs to be actively involved in downtown revitalization efforts.

23 **Planning for Downtown 2000** *Dolores P. Palma*
Revitalization demands aggressive and intentional action.

26 **A Tale of Two Cities** *David M. Feehan*
Ann Arbor, Battle Creek and Kalamazoo are proving downtowns can be revitalized.



29 **Parking Keeps the City Moving** *E.J.M. Vleugels*
No parking moves the city out of town to suburban shopping centers and office complexes.

31 **Townhomes Built in Unique Place in Detroit Project** *Rich Parker*
Housing development sits atop six-story parking garage.

34 **Global Marketplace is Changing Dynamics of Employee-Employer Relationship** *Joshua M. Javits*
Clinton administration creates labor-management commission.

37 **Industry Profile** *Lou Cook*
President and founder of Colonial Parking, Inc., was born with the fire to run his own business.

COLUMNS

Chairman's Update 4
Bernard Meyer

Government Affairs 8
F. James Koch

Legal Matters 13
Michael Stevens

DEPARTMENTS

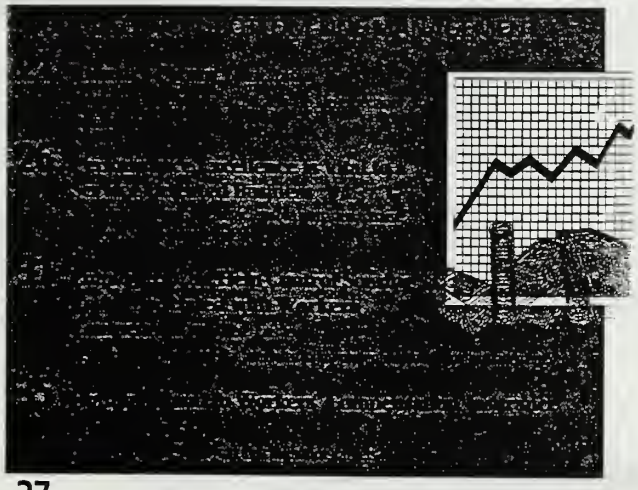
News Track 15
What's New? 18
Regional Round-up 39
NPA News 42
Product Spotlight 45
PCC Directory 47
Professional Services Directory 50
Ad Index 52

September 1993
Vol. 32, No. 8

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES



37 **Electric Vehicles Continued: Denmark's Kewet** *Rich Parker*
Despite a lack of speed and distance, it can fill a niche.



39 **Parking Structure Lighting Simplified**
Donald R. Monahan, P.E.
A practical guide for determining lighting design options or evaluating existing illuminance.

48 **Samir "Sam" Botros: Voyaging to Cleveland**
Lou Cook
NPA's GINP chairman crossed the sea to find his dream.

COLUMNS

Chairman's Update 4
Bernard Meyer

Government Affairs 7
F. James Koch

Legal Matters 10
Michael Stevens

Money Talks 46
Jeffrey B. Mackevich

DEPARTMENTS

News Track 12
Regional Round-up 16
What's New? 19
NPA News 50
Spotlight 52
PCC Directory 55
Professional Services Directory 58
Ad Index 60

Railway Age

October 1993









31 Control systems multiply, but where is ATCS?
The ATCS issue of positive train separation will have to be addressed.

41 Transit signaling: The next generation
How the NYCTA may prompt a major move to communications-based technology.

57 What's needed to keep intermodal growing
Railway Age's first Intermodal Roundtable focused on several key industry issues.

65 "Don't quote me, but—"
Most FRA inspectors do a good job, short lines say. But that's not the whole story

70 On the record with FRA's Jolene Molitoris
The FRA administrator talks about how safety can be a "win-win" situation.

77 Railway Age 1993 Golden Freight Car Awards
Top awards go to Norfolk Southern and the Sand Springs Railway.

84 Railroad flood fighters: Heroes all
In a disaster whose full cost may never be counted, stories of heroism abounded.

16 Rail Update
SD60MACs on Conrail; Moyers makes SP changes; Technotransport; Excalibore; The Supply Side.

26 Transit Update
125-mph turbo trains; Seattle transit for 2020; LACMTA and the Pasadena Line; In Transit.

COMMENTARY

4 Inside
9 Watching Washington
10 Lines on Labor
12 Financially Speaking
108 A Letter from the Publisher

DEPARTMENTS

6 Industry Outlook
8 The Railway Market
26 World Update
86 100 Years Ago
86 150 Years Ago
88 People
90 Products
94 Literature
95 Letters
97 Meetings
101 Advertisers Index/Ad Sales
102 Professional Directory
104 Classified

Cover photo courtesy Union Switch & Signal

ENR CONTENTS



ROARING BLAZES RAISE QUESTIONS

California again suffers disastrous fires that lead officials to question the adequacy of building codes and materials as well as the role of winding roads that hindered emergency equipment. **Page 9**

8 Code groups pushing for a national standard
9 Implosion entertains on Las Vegas Strip
12 Canada's government to boost public works
13 House panel ponders recovery measures
14 FAA discouraging nearby sewage plants
15 Optimism prevails for 1994
15 Gas project halt battled
16 Nonunion and minority contractors share training program
17 Japan pledges to change contracting procedures
17 Catch basin mystery on I-95
19 Italy opens rail system bidding to EC members
20 ASCE looks at transportation's future and large dams in China
20 Ex-Im bank set to back developments in China
22 Major reservoir plan advances in California
24 Rehab of historic military post in San Francisco draws fire
24 Billion-dollar entertainment project proposed in Florida
25 Stormwater retention tanks are squeezed into tight site

COVER STORY



BOSTON SINKS TUBES

Immersed steel tubes under Boston Harbor, sandwiched between cut-and-cover approach tunnels, will link the city with Logan International Airport. **Page 28**

FEATURES

35 Mississippi span bends cables over single pylons
36 Specialty Contractor: NUCA exec autopsies nation's clogged veins

DEPARTMENTS

4 Letters
5 Construction Week
7 Washington Observer: Bu Rec, federal facilities, drinking water
26 People
38 Product showcase
41 Pulse
64 Official Proposals (continued on pp. 65-68)
70 Editorials

CONSTRUCTION ECONOMICS

55 Materials Prices: Plastics, pipe
56 Market Trends: education, medical

NEXT WEEK IN ENR

Curtain wall ailments

Better Roads

CONTENTS

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOL. 63, NO. 10
OCTOBER 1993

FEATURES

PERFORMANCE WARRANTIES — SIGNING ON THE DOTTED LINE 15

THE FHWA'S ROLE IN RETROREFLECTIVE PERFORMANCE 18

SHOULD YOU LEASE OR BUY? 21

HOW TO IMPROVE DESIGN OF SHORT-SPAN STEEL BRIDGES 25

HARRIS COUNTY SOLVES ROADSIDE DRAINAGE PROBLEMS 28

PARTS BARGAIN HUNTING: ARE THE RISKS WORTH THE GAMBLE? 29

MDOT MAKES GOOD USE OF SLURRY SEAL 32

SHOULD YOU HAUL WITH A TRUCK OR A SCRAPER? 35



DEPARTMENTS

READER SERVICE CARD 5-6

EDITORIAL VIEWPOINT 7

PUBLISHER'S COMMENTS 8

LETTERS 11

NEWS 12

CATCHING UP ON COMPUTERS 14

PRODUCTS 36

PAGAN'S PERSPECTIVE 37

CATALOGS 38

SUBSCRIPTION CARD 39-40

CALENDAR 42

CLASSIFIED ADVERTISING 42

PROFESSIONAL SERVICES 42

ADVERTISERS' INDEX 42

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 31/NO. 10 OCTOBER 1993

FEATURES

33 Precast construction keeps culvert on track
Never a good time to close a 22,000 vpd arterial, but you can minimize trouble by using precast units (Regional editions only)

34 Two New England states revamp RAP use in recycling specs
New Hampshire alters recycling specs to include more reclaimed asphalt pavement (RAP) in surface courses; Maine reduces top size for RAP

38 Battered driving surface does double duty as reclaimed, stabilized subbase
Calcium chloride used to stabilize pulverized driving course in Vermont mountains; stabilized, compacted base gets overlay

42 Swansea leads in Massachusetts cold in-place recycling work
Pavement management specialists work with American and Canadian contractors to promote cold in-place recycling in New England

46 You'll get big payback by attending 7th 4R Conference & Road Show℠
Dynamic and innovative conference program complemented with state of the art exhibition in the Road Show; join us in Philadelphia

52 New paver, profiler controls keep machines on level grade
Advancements in high-tech monitors, grade controls for asphalt, concrete pavers and milling machines enable equipment to perform at peak

58 Material hauling equipment abounds at ConExpo '93

64 Truckmakers rev up for '94; mix modifications, new models

DEPARTMENTS

5 Editorial
6 Roads Report
8 Law: The Contractors Side
12 SHRP's Cutting Edge
14 Asphalt Answers
16 Truck Tracks
18 Down the Road
21 Mailbag
24 Spanning the News
25 The Aggregate View
68 Product & Equipment Market
78 Advertisers Index

SEPTEMBER–OCTOBER 1993 NUMBER 168

TR NEWS

3 Trends in Transportation
TRB's Field Visit Program in 1992–1993

13 Making Aircraft Faster, Better, and Cheaper
Setting Priorities for NASA's Aeronautics Program

17 Americans With Disabilities Act of 1990
Mandate for Full Accessibility

24 Expediting Product Acceptance in Highway Programs
New Evaluation Centers Provide Opportunity for Industry

28 TRB Annual Meeting Participant Survey

29 Research Pays Off
Florida Improves Noise Prediction

2 Letters
30 Profiles
32 News Briefs
36 TRB Highlights
CRP News, 37
39 Calendar
42 Bookshelf
New TRB Publications, 43

CONTENTS

OCTOBER 1993
VOL. 30, NO.10

TRAINING

THE HUMAN SIDE OF BUSINESS℠

SPECIAL SECTION

INDUSTRY REPORT 1993 29
An introduction to TRAINING's annual analysis of employer-sponsored training in the United States.

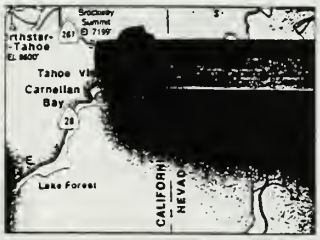
TRAINING BUDGETS BOOM 37
By Bob Filipczak
A lot of organizations have gotten serious about employee development this year, as training budgets experience the biggest rise since 1989.

WHO'S GETTING TRAINED? 53
By Paul Froiland
U.S. organizations provided significantly more training for more workers this year.

FEATURES

A NEW KIND OF POLICE DEPARTMENT 66
By Beverly Geber
Here's how a rancorous workplace healed itself with a novel form of management. You might call it empowered command-and-control.

SEVEN STEPS TO BUILDING BETTER TRAINING 75
By Martin M. Broadwell
Yes, training can make a difference, and there's nothing mysterious about it. Take supervisors, for example...



Page 66



Page 75



Page 82

CAN TRAINING STOP TURNOVER? 82
By Marc Hequet
Common sense suggests that the right kind of training could reduce the flow of employee turnover. But in fact, the empirical evidence is sketchy.

DEPARTMENTS

EDITORS' NOTEBOOK 10
Piling On

TRAINING TODAY 12
Work-family benefits pay off, how to moderate a panel, computers for career planning and more.

CALENDAR

LETTERS

BOOKS & FILMS

TECH TRENDS
The Computer Classroom

NEW PRODUCTS & SERVICES

FREE INFORMATION

SEMINARS & WORKSHOPS

CLASSIFIEDS 118

VIEWPOINT 120
Continuous Human Improvement
By Bob Steinbach

Cover illustration by Sally Wern Comport

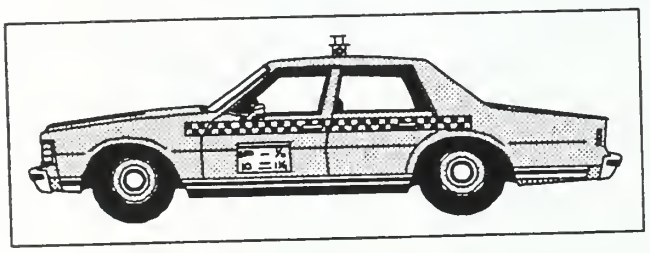
PRINTED WITH SOY INK

TRANSPORTATION JOURNAL

CONTENTS

FALL 1993 / VOL. 33 / No. 1

ARTICLES	*Page*
Career Stage, Time Spent on the Road, and Truckload Driver Attitudes JAMES C. McELROY JULENE M. RODRIGUEZ GENE C. GRIFFIN PAULA C. MORROW MICHAEL G. WILSON	5
Condemnation — An Alternative Means for Railroad Line Acquisitions FRITZ R. KAHN	15
Shipper Perceptions of Intermodal Equipment MICHAEL L. JOHNSTON STEVE MARSHALL	21
Intrastate Trucking Deregulation: Have Both the Negative and Positive Impacts Been Overstated? BENJAMIN J. ALLEN T.H. MAZE CLYDE K. WALTER	30
The Post-1984 Experience with New Small and Regional Railroads JOHN F. DUE SUZANNE D. LEEVER	40
Federal Regulations and the Competitiveness of U.S. Liner Ship Operators ROBERT C. WATERS	53
SUBJECT INDEX TO VOL. 32	59



WWS WORLD WIDE SHIPPING

OCTOBER/NOVEMBER 1993 Vol. 56, No. 7

Contents

FEATURES

Canada's Railways — 49
By M.D. APEDAILE, *Ass't Vice President, C.P. Rail*

Commentary — 2
By CHRISTOS N. KRITIKOS, *President, Ceres Terminals Incorporated*

Intermodalism — 43
By DOUGLAS CHEANEY, *President, DGC Inc.*

Intermodalism — 49
By JAY HIRST, *Sr. Vice President, Alliance Shippers, Inc.*

Maritime Safety — 58
By F. EUGENE GUEST, Ph.D., *Director, Marine Safety International*

Quality Services — 53
By COLIN LEWIN, *Director, Through Transport Mutual Services*

Shipping — 25
By RONALD B. GOTTSCHALL, *Managing Director, TWRA*

Shipping — 28
By DON McCALLIAN, *Consultant*

TAA — 36
By Wm. A. McCURDY, JR. *Logistics Council, E.I. duPont deNemours*

U.S. Customs — 17
By DAVID SERKO, *Senior Partner, Serko & Simon, NY, Contributing Editor, WWS/World Wide Shipping*
and By MATTHEW A. GOLDSTEIN, *Associate*



Page 17 David Serko



Page 63 Mannesman Demag

WWS/STAFF REPORTS

Atlantic Container Line — 38
By PAT DEMETRIO, *Contributing Editor*

Advertizers Index — 61

Brazil — 40
By PAT DEMETRIO, *Contributing Editor*

Business Outlook — 15
Special to WWS/World Wide Shipping

Deregulation — 32
By SUZANNE CAUTHEN, *WWS, Senior Editor*

Equipment — 60
By MARTIN C. PILSCH, JR., *WWS, Equipment*

Maritime Policy — 20
By SUZANNE CAUTHEN, *WWS, Senior Editor*

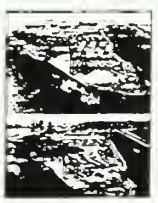
Port Engineer's Notebook — 63
Special to WWS/World Wide Shipping

State of Steamship Industry — 23
By GEORGE ADCOCK, *WWS, Ports*

Washington Report — 6
By CARLO SALZANO, *WWS, Washington, DC*



Page 63 Alimak Elevator



Page 64 Port of Miami

TUNNELS & TUNNELLING

CONTENTS

September 1993 Vol 25 No 9

Comment: What's next on the menu, Mr President? 5

World News 9, 10, 11, 13, 15, 16

ICELAND 19
Battling through hell and high water
Peter Darling, The Editor

EC GRANTS 25
Helping you to help yourself
Adam Bernstein, Technical Journalist

Pipe jacked solution for Parisian sewer 29
John Hellings, Assistant Editor

RUPERTUS TUNNEL 34
Canopied portals for NATM rail tunnel
Anna Way, Production Editor

ENNERDALE INTAKE 39
A Mexican-type shield conquers Cumbria's oozing clays
Peter Darling, The Editor

BRITISH TUNNELLING SOCIETY 46
Nuclear test tunnels in Nevada
D Lachel, Lachel & Partners, and Dr D Linger, Test Site Defense Nuclear Agency

HARD ROCK TBM TECHNOLOGY 51
Discs lead development drive
Maurice Jones, IEng, AMI, MIST, Technical Journalist

Business & Finance 55

Products & Services 59

Contracts & Orders 60

Books & Reports 63

Diary 66

CONTENTS

October 1993 Vol 25 No 10

Comment: Middle East peace — dream, mirage or reality? 5

World News 7, 8, 9, 11, 13, 14

Coming clean over Storebaelt 18
Peter Darling, The Editor

Ground vibrations from TBMs and shields 30
Richard F Flanagan, Professional Associate, Parsons Brinckerhoff International, Singapore

The Eagle shows its colours at Hekni 35
Peter Darling, The Editor

Conwy solution to fishy dilemma
John Hellings, Assistant Editor

Drifter 43

PIPE JACKING & MICROTUNNELLING PREVIEW 45
International conference & exhibition
Peter Darling, The Editor

WATER & MUCK PUMPS 49
Essential workers in the tunnelling industry
David Lawton, Technical Journalist

Business & Finance 53

People & Places 55

Contracts & Orders 56

Diary 58



The Pen-y-Clip Tunnel, final link in the A55 coast road up-grade in North Wales, UK, is to open this month, after four years under construction, to carry traffic westwards. The 930m long, 7.3m wide tunnel was excavated by drill+blast under a headland (*World News*, Sept '92, p15). The varied ground required structural support throughout; shotcreting is pictured taking place near the east portal, where closely spaced steel ribs were necessary. Tunnelling sub-contractor was Trafalgar House Construction (Tunnelling) for client the Welsh Office.

WorkingWoman
NOVEMBER 1993

CONTENTS

FEATURES



49 SPECIAL ISSUE: REDEFINING SUCCESS
In the '50s, it was marriage. In the '60s, it was changing the world. In the '70s, it was career advancement. In the '80s, it was money. In the '90s, it's personal fulfillment—any way you can get it.

50 REACHING FOR MORE
How people are taking the best parts of their lives to make a better whole • ***By Patricia O'Toole***

54 SURVEY: SUCCESS—NOT WHAT IT USED TO BE
A nationwide WORKING WOMAN survey reveals that people are ready to trade money for time, prestige for fulfillment • ***By Julia Kagan***

56 GET A LIFE
How five women made major changes—and succeeded.



62 CHANGING BUSINESS AS USUAL
Five companies that built their success on corporate values • ***By Janet Bamford***

66 THE WAYS WE WANTED TO BE?
Pop culture keeps changing women's role models for success—not always for the better.
By Ron Givens

HEALTH

86 THE HIGH PRICE OF BEING FEMALE
Drugs prescribed primarily to women are often overpriced and under-researched • ***By Andrea Rock***
Plus The Top 10 Drug-Price Offenders



LIVING

91 DESIGN Decorating by Number: An easy, striking way to decorate for the holidays.
92 ENTERTAINING Parties by Mail: Three delicious holiday buffets to order by phone.
94 BUYER'S GUIDE Best of the Bunch: Fine wines for corporate gift-giving and celebrating.

DEPARTMENTS

13 EDITOR'S LETTER

17 BIZ BUZZ
Giving Family Leave a Checkup. Bigger Breaks for Small Business; (Work) Secrets of the Stars: Tough as Steel?; The No-Option Stock Plan; Trendicators; and more.

29 MANAGING
MBA-in-a-Box: Management software is hot. But can it make you a better manager? • ***By Nancy K. Austin***
34 Plus How I Did It: Healthtex's Ellen Rohde injects new life into a troubled company.



41 YOUR MONEY
Your Best 401(k) Moves Now: Saving money for your retirement has never been as profitable—or as confusing.
By Jinny St. Goar
44 Plus How to Fight Outrageous Bank Fees
By Mary Rowland

75 CAREER STRATEGIES
Moving Over Instead of Up: A horizontal move can boost your career or stall it. Here's how to tell the difference.
By Dr. Adele Scheele
80 Plus Finding the Right Words: Criticizing an Employee's Work
By Stephen M. Pollan and Mark Levine

85 SMALL BUSINESS
Rising-Star Franchises: Three lesser-known companies with track records for profits and women-friendly philosophies • ***By Ylonda Gault***

111 OUT-BOX
Execu-Bob Angst • ***By Barbara Lippert***

[illegible] BY BRIAN SMALE

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____ _____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE DOCUMENTS COLLECTION LIBRARY

BOSTON MA NOV 13 93 0.75 6773994

Leonard Adams
Government Docs.
Univ. Library
Univ. of Mass.
Amherst MA 01003

MASS. STL1.3:1993/6

SELECTED ACQUISTIONS

NOVEMBER - DECEMBER 1993

GOVERNMENT DOCUMENTS
COLLECTION

JAN 26 1994

University of Massachusetts
Depository Copy

STATE TRANSPORTATION LIBRARY

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116
(617) 973-8000

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Lynn Matis
Law Librarian

Irene Guthrie
Secretary

SELECTED ARTICLES FROM LEGAL PERIODICALS

EMPLOYEE BENEFITS-MANAGING WORKERS COMPENSATION MEDICAL COSTS: A STATE-BY-STATE GUIDE Paul T. Shultz and Karen L. Looram, *Employee Relations Law Journal,* Winter 1993/94 p.251-268.

ENVIRONMENTAL CONSIDERATIONS IN A RAILROAD LAND PURCHASE by Robert E. Cattanach and Kenneth H. Podeskar, *Transportation Practitioners Journal,* Fall 1993, p.23-30.

ON DEVELOPING ISSUES IN LOCAL, STATE, AND GOVERNMENT LAW, Report of the Committee on Land Use, Planning and Zoning Law, CURRENT ISSUES RELATED TO VESTED RIGHTS AND DEVELOPMENT AGREEMENTS, p.779-798; RECENT DEVELOPMENTS WITH RECA SUBTITLE D AND COMMERCE CLAUSE CASES AFTER THE *HUNT* AND *FORT GRATIOT* DECISIONS, p.797-816; THE NOLLAN DECISION AMIDST LAND-USE EXTRACTIONS AND IMPACT FEES, p.817-826; ALL IS NOT QUIET ON THE WESTERN FRONT, p.827-840; THE MEASURE OF DAMAGES IN "INVERSE CONDEMNATION" CASES p.841-846; THE PLAN AS LAW: A YEAR FOR FUTURE DEVELOPMENTS p.869-880; INNOVATIVE GROWTH CONTROL MEASURES: THE POTENTIAL IMPACTS OF RECENT FEDERAL LEGISLATION AND THE *LUCAS* DECISION, p.881-892, *The Urban Lawyer,* Fall 1993.

PENSION INTERFERENCE DOES NOT CONSTITUTE VIOLATION OF THE ADEA: *HAZEN PAPER CO. v. HIGGINS,* by Thomas Brown and Randell Montellaro, *Employee Relations Law Journal,* Winter 1993/94, p.187-196.

PRESERVING THE TRIAL RECORD FOR APPEAL by G. Nicholas Herman, *TRIAL*, October 1993, p.45-49.

RESTORING URBAN WATERWAYS by Michael C. Houck, *National Wetlands Newsletter,* November/December 1993, p.8-9.

ST. MARY'S HONOR CENTER V. HICKS: LOTS OF SOUND AND FURY, BUT WHAT DOES IT SIGNIFY? by Victoria A. Cundiff and Ann E, Chaitovitz, *Employee Relations Law Journal*, Winter 1993/94, p.147-168.

THREE SHOTS AT STATE ECONOMIC REGULATION OF INTERSTATE MOTOR CARRIERS by Samuel Ewer Eastman, *Transportation Practitioners Journal,* Fall 1993, p.31-38.

AGED AUTOMOBILE DRIVERS--UNITED STATES.

HE
131
.T687r
no.1375

Safety research : enforcement, speed, older drivers, and pedestrians / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1992.
73 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1375)
ISBN 0-309-05418-4
1. Aged automobile drivers--United States. 2. Aged automobile drivers. 3. Traffic safety--United States. 4. Traffic safety. 5. Traffic regulations--United States. 6. Traffic regulations.

10 DEC 93 27226608 TLBAsc 92-46874

AGED--EMPLOYMENT.

HF
5549.5
.044
S52
1994

Shea, Gordon F.
Managing older workers : overcoming myths and stereotypes / Gordon F. Shea. -- Menlo Park, CA. : Crisp Publications, 1994.
ix, 68 p. : ill. ; 25 cm. -- (A Fifty-minute series.)
ISBN 1-56052-182-1

1. Personnel management. 2. Aged--Employment.

06 DEC 93 29294993 TLBAsc 92-54364

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886.5
.M47
1992

Methodologies for estimating emission and travel activity effects of TCMs : draft final report / prepared by B.S. Austin ... [et al.]. -- San Rafael, CA : Systems Applications International, [1992]
1 v. (various pagings).

1. Air quality management--United States. 2. Choice of transporation. 3. Air--Pollution. 4. Automobiles--Motors--Exhaust gas--Environmental aspects.

06 DEC 93 28174274 TLBAsc

AIRPORTS--DIRECTORIES.

REF.
TL
725
.J36

Jane's Information Group. Jane's Air Transport Data.
Jane's airports and handling agents. USC: USA & Canada : including FBO guide. -- London [England] : Jane's Information Group ; Alexandria, Va. : Distributed in the USA by Jane's Information Group, [1988]-
2 v. ; 23 cm.
ISBN 0-7106-0552-8

1. Airports--Directories. 2. Fixed base operators industry--Directories. 3. Airports--Management--Directories.

06 DEC 93 22143720 TLBAsc

ALCOHOLICS--FAMILY RELATIONSHIPS.

A-V
HV
5275
.A43
1982

Alcoholism, the family disease [sound recording]. -- New York, NY : Al-Anon Family Group Headquarters, Inc., c1982.
1 sound cassette (54 min.) : 1 7/8 ips, mono. ; + notes.

1. Alcoholics--Family relationships. 2. Alcoholism counseling.

23 DEC 93 11349739 TLBAsc

ALCOHOLICS--FAMILY RELATIONSHIPS.

HV
5132
.I5
1990

--In all our affairs : making crises work for you. -- New York, N.Y. : Al-Anon Family Group Headquarters, c1990.
x, 245 p. ; 22 cm.
ISBN 0-910034-73-7

1. Twelve-step programs--Religious aspects. 2. Alcoholics--Family relationships. 3. Spiritual life. 4. Al-Anon Family Group Headquarters, Inc

23 DEC 93 23436612 TLBAsc 90-8451

ALCOHOLICS--FAMILY RELATIONSHIPS.

A-V
HV
5132
.L58
1990

Living with sobriety [sound recording] : another beginning / Al-Anon Family Group Headquarters. -- New York : Al-Anon Family Group Headquarters, 199
1 sound cassette : analog, 1 7/8 ips
ISBN 0-910034-61-3

1. Alcoholics--Family relationships. 2. Al-Anon Family Group Headquarters, Inc.

23 DEC 93 22920558 TLBAsc

ALCOHOLICS--FAMILY RELATIONSHIPS.

A-V
HV
5132
.W34
1989

Walk this path of hope [videorecording] : Al-Anon in institutions / produced for Al-Anon Family Groups by Crommie & Crommie. -- New York, N.Y. : Al-Anon Family Groups, Inc., c1989.
1 cassette (11 min.) : sd., col. ; 1/2 in. + 1 handout.

1. Al-Anon Family Group Headquarters Inc. 2. Alcoholics--Family relationships.

23 DEC 93 26537407 TLBAec

ARTIFICIAL INTELLIGENCE.

HE
131
.T687r
no.1399 Artificial intelligence / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 44 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1399)
ISBN 0-309-05471-0

1. Artificial Intelligence. 2. Fuzzy sets. 3. Neural networks (Computer science) 4. Traffic engineering--Data processing.

10 DEC 93 29383224 TLBAsc

AUTOMBILES--BRAKES.

TL
275.5
.A57
1993 Anthony, Charlee.
Evaporation test variability study / [Charlee Anthony, Leonard Mackowiak]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
73 p. in various pagings ; 28 cm.
STRN: DOT HS 807 992

1. Autombiles--Brakes. 2. Hydraulic fluids.

08 DEC 93 28949875 TLBAsc

BRIDGES, CONCRETE--FLOORS--MAINTENANCE AND REPAIR.

TG
325.6
.C52
S77
1993 Chase, S. B.
Structural effects of epoxy coating disbondment / [S.B. Chase]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vii, 57 p. : charts ; 28 cm.
STRN: FHWA-RD-93-055

1. Bridges, Concrete--Floors--Maintenance and repair. 2. Bridges, Concrete--Maintenance and repair. 3. Epoxy coatings.

08 DEC 93 29307474 TLBAsc

BRIDGES--DESIGN.

HE
131
.T687r
no.1380 Autostress design of highway bridges. -- Washington, D.C. : National Academy Press, 1993.
v, 49 p. : ill. ; 28 cm. -- (Transportation Research record, ISSN 0361-1981 ; no. 1380)
ISBN 0-309-05450-8 (pbk.)

1. Bridges--Design. 2. Load factor design.

22 NOV 93 28063950 TLBAsc 93-4402

BRIDGES--DESIGN AND CONSTRUCTION.

TG
300
.P68
E33
1993 Powell, G. H. (Graham Harcourt), 1937-
Effective use of nonlinear analysis in bridge design / by Graham H. Powell -- Berkeley, Calif. : Dept. of Civil Engineering, University of California, [1993]
ii, 57 p. : ill. ; 28 cm. -- (Report ; no. UCB/SEMM-93/05)

1. Bridges--Design and construction. 2. Structural analysis (Engineering)

08 DEC 93 28361893 TLBAsc

BRIDGES--FOUNDATIONS AND PIERS.

TG
320
.D74
1993 Drilled shafts for bridge foundations [Clyde N. Baker ... et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
xii, 335 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-004

1. Bridges--Foundations and piers. 2. Boring. 3. Non-destructive testing

08 DEC 93 29212817 TLBAsc

BRIDGES, IRON AND STEEL--CALIFORNIA ANTIOCH--TESTING.

TG
25
.A55
R43
1992 Reed, Frank C.
Effects of corrosion on the bare weathering steel in the Antioch Bridge : report / prepared by Franklin C. Reed. -- [Sacramento, Calif.] : State of California, Dept. of Transportation Division of New Technology, Materials and Research, Office of Structural Materials ; [Springfield, VA : Available through the National Technical Information Service, 1992]
vi, 72 p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-93/09

06 DEC 93 27217937 TLBAsc SEE NEXT C

BRIDGES--MAINTENANCE AND REPAIR.

TG
325.6
.C67
1992 Cost effective bridge deck rehabilitation/replacement / Gary Runco...[et al.]. -- Pittsburgh, Pa. : Wilbur Smith Associates ; [Springfield, Va. : Available from National Technical Information Service], 1992.
ca. 111 leaves in various pagings : ill. ; 28 cm.

1. Bridges--Maintenance and repair. 2. Bridges--Inspection. 3. Bridges--Floors.

08 DEC 93 28945510 TLBAsc

BRIDGES--MAINTENANCE AND REPAIR--CONGRESSES.

Overeize
TG
325
.S95
P72
1993

Symposium on Practical Solutions for Bridge Strengthening & Rehabilitation (1993 : Ames, Iowa)
Practical solutions for bridge strengthening & rehabilitation, April 5-6, 1993. Des Moines, Iowa / funded by the National Science Foundation and sponsored by Iowa State University. Symposium co-directors F. Wayne Klaiber and Wallace W. Sanders, Jr. -- Ames, Iowa : Iowa State University, [1993?]
viii, 392 p. : ill. ; 29 cm.
1. Bridges--Maintenance and repair--Congresses. 2. Bridge railings--Design and construction--Congresses. 3. Bridge approaches--Design and construction- -Congresses.

23 DEC 93 29423695 TLBAsc

BRIDGES--PENNSYLVANIA--ABUTMENTS--DESIGN AND CONSTRUCTION.

TG
325
.R64
D45
1993

Rojas-Gonzalez, Luis F.
Demonstration applications in the use of flowable backfills for bridge abutments / Luis F. Rojas-Gonzalez, David L. Knott, F. Barry Newman. -- [Harrisburg : Pennsylvania Dept. of Transportation ; Springfield, VA : Available through the National Technical Information Service, 1993]
iv, 71, [21] p. : ill. ; 28 cm.

1. Bridges--Pennsylvania--Abutments--Design and construction. 2. Fly ash. 3. Aggregates (Building materials)

08 DEC 93 29426784 TLBAsc

BRIDGES, WOODEN--DESIGN AND CONSTRUCTION.

TG
375
.D38
C67
1993

Davalos, J. F.
Corrosion protection of steel hardware used in modern timber bridges / [J.F. Davalos and S.H. Petro]. -- McLean, Va. : Federal Highway Administration, Office of Research and Development ; [Springfield, VA : Available through the National Technical Information Service, 1993]
viii, 42 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-044

1. Bridges, Wooden--Design and construction. 2. Bridges, Wooden--Maintenance and repair. 3. Steel--Corrosion. 4. Corrosion resistant materials.

08 DEC 93 28920063 TLBAsc

BUS LINES--UNITED STATES--MANAGEMENT--CONGRESSES.

HE
131
.T687r
no.1390

Public transit, 1993 : bus, paratransit, and ridesharing. -- Washington, D.C. : National Academy Press, 1993.
v, 77 p. : ill., maps ; 28 cm. -- (Transportation research record ; no. 1390)
ISBN 0-309-05461-3

1. Bus lines--United States--Management--Congresses. 2. Paratransit services--United States--Congresses. 3. Ridesharing--United States--Congresses. 4. Local transit--United States--Congresses.

22 NOV 93 28584766 TLBAsc 93-29884

CLERICAL ABILITY AND APTITUDE TESTS.

JK
716
.H63
P72
1992

Hoffman, Maryhelen H. Paulick.
Practice for clerical, typing, and stenographic tests / Maryhelen H. Paulick Hoffman. -- 8th ed. -- New York : Arco : Prentice Hall, c1992.
252 p. ; 28 cm.
ISBN 0-671-84668-X

1. Civil service--United States--Examinations. 2. Clerical ability and aptitude tests. 3. Stenographers. 4. Typewriting--Examinations, questions, etc.

08 DEC 93 24871296 TLBAsc 91-4208

CONCRETE.

HE
131
.T687r
no.1382

1993 TRB distinguished lecture / Bryan Mather. Developments in concrete technology / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
110 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1382)
ISBN 0-309-05451-6

1. Concrete. 2. Concrete--Testing. 3. Pavements, Concrete.

22 NOV 93 28215142 TLBAsc 93-85

CREATIVE ABILITY IN BUSINESS.

HD
53
.M37
N56
1994

Mattimore, Bryan W.
99% inspiration : tips, tales, and techniques for liberating your business creativity / Bryan W. Mattimore. -- New York : American Management Association 1994.
xi, 180 p. : ill. ; 23 cm.
ISBN 0-8144-7788-7

1. Creative ability in business.

08 DEC 93 28587043 TLBAsc 93-2846

DRUG ABUSE AND CRIME--GOVERNMENT POLICY--UNITED STATES.

HV
5825
.U54
D784
1993

United States. General Accounting Office.
Drug control : Treatment Alternative Program for drug offenders needs stronger emphasis : report to the Chairman, Select Committee on Narcotic Abuse and Control, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1993]
19 p. : ill. ; 28 cm.
1. Drug abuse and crime--Government policy--United States. 2. Drug abuse--Treatment--Government policy--United States.

08 DEC 93 27704027 TLBAsc

ELECTRIC ENGINEERING--EXAMINATIONS, QUESTIONS, ETC.

TK
169
.E43
1991

Electrician-electrician's helper / edited by Rex Miller. -- 6th ed. -- New York : Arco, c1991.
241 p. : ill. ; 28 cm.
ISBN 0-13-250028-0

1. Electric engineering--Examinations, questions, etc.

09 DEC 93 24108815 TLBAsc 91-24900

FUTURE IN POPULAR CULTURE.

CB
158
.P47
R62
1993

Petersen, John L.
The road to 2012 : looking toward th next two decades / John L. Petersen ; prepared by the Arlington Institute fo the U.S. Coast Guard's Strategic Planning Staff. -- Washington, DC : U.S. Dept. of Transportation, U.S. Coast Guard, c1993.
351 p. : ill. ; 28 cm.

1. United States. Coast Guard 2. Forecasting--Study and teaching. 3. Future in popular culture.

08 DEC 93 29195435 TLBAsc

ENVIRONMENTAL POLICY--UNITED STATES.

TD
171
.U54
E58
1991

United States. General Accounting Office.
Environmental protection : meeting public expectations with limited resources : report to the Congress / United States General Accounting Office. -- Washington, D.C. : GAO, 1991.
48 p. : ill. ; 28 cm.

1. Environmental protection--United States. 2. Environmental policy--United States.

09 DEC 93 24230694 TLBAsc

GOVERNMENT EXECUTIVES--UNITED STATES --STATES--DIRECTORIES.

REF.
Oversize
JK
2482
.E94
S77

State executive directory annual. -- 1991/1992- . -- Washington, DC : Carroll Pub. Co., [1991-
v. ; 29 cm.
Annual.
Continues in part: Federal/state executive directory.
ISSN 1056-7011 = State executive directory annual

1. Government executives--United States--States--Directories. 2. Legislators--United States--States--Directories.

23 DEC 93 23820019 TLBAsc 93-64262

ENVIRONMENTAL PROTECTION--UNITED STATES.

TD
171
.U54
E58
1991

United States. General Accounting Office.
Environmental protection : meeting public expectations with limited resources : report to the Congress / United States General Accounting Office. -- Washington, D.C. : GAO, 1991.
48 p. : ill. ; 28 cm.

1. Environmental protection--United States. 2. Environmental policy--United States.

09 DEC 93 24230694 TLBAsc

GREENHOUSE GASES--UNITED STATES.

TD
885.5
.G73
E44
1993

Emissions of greenhouse gases in the United States 1985-1990. -- Washington, DC : Energy Information Administration, Office of Energy Markets and End Use, U.S. Dept. of Energy, [1993]
xii, 99 p. ; 28 cm.

1. Greenhouse gases--United States. 2. Greenhouse effect, Atmospheric--United States. 3. Atmospheric carbon dioxide--United States. 4. Nitrous oxide, Atmospheric. 5. Methane. 6. Motor fuels--Environmental aspects.

17 NOV 93 29211322 TLBAsc

FUND RAISING.

HG
177
.E34
F86
1993

Edlee, L. Peter.
Fundraising : hands-on tactics for nonprofit groups / L. Peter Edlee. -- New York : McGraw-Hill, c1993.
xiii, 288 p. : ill. ; 25 cm.
ISBN 0-07-018927-7

1. Fund raising. 2. Nonprofit organizations--Finance.

17 NOV 93 26260517 TLBAec 92-24786r92

HANDICAPPED--UNITED STATES--TRANSPORTATION.

HE
131
.T687r
no.1378

Accessible transportation and mobility. -- Washington, D.C. : National Academy Press, 1993.
v, 73 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1378)
ISBN 0-309-05422-2 (pbk.)

1. Handicapped--United States--Transportation.

22 NOV 93 27934644 TLBAec 93-7873r93

HBEM-III (COMPUTER PROGRAM)

TE
220
.M45
H43
1990

Memmott, Jeffery L. (Jeffery Lynn)
The HBEM-III benefit-cost computer program / by Jeffrey L. Memmot. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1990]
x, 147 p. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1128-1F)
STRN: FHWA/TX-91/1128-1F
1. Roads--Texas--Maintenance and repair--Cost effectiveness--Mathematical models. 2. Traffic flow--Texas--Mathematical models. 3. Highway planning--Tex as--Mathematical models. 4. H BEM-III (Computer program)

06 DEC 93 27662413 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--CONGRESSES.

HE
131
.T687c
no.409

National Conference on High-Occupancy Vehicle Systems (6th : 1992 : Ottawa, Ont.)
Sixth National Conference on High-Occupancy Vehicle Systems : moving into the 21st century : conference proceedings / presented by Transportation Research Board, National Research Council ; in cooperation with Federal Highway Administration and Federal Transit Administration. -- Washington, D.C. : Transportation Research Board, National Research Council [1993]
74 p. : ill. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; n o. 409)

22 NOV 93 29002023 TLBAsc SEE NEXT CRD

HIGH OCCUPANCY VEHICLE LANES--UNITED STATES.

HE
131
.T687sy
no.185

Fuhs, Charles A.
Preferential lane treatments for high-occupancy vehicles / Charles A. Fuhs. -- Washington, D.C. : National Acadeay Press, 1993.
80 p. : ill., maps ; 28 cm. -- (Synthesis of highway practice, ISSN 0547-5570 ; 185)
ISBN 0-309-05312-9

1. High occupancy vehicle lanes--United States.

22 NOV 93 28600707 TLBAsc 93-60010

HIGH OCCUPANCY VEHICLE LANES--UNITED STATES--CASE STUDIES.

HE
336
.H4
T873
1992

Turnbull, Katherine F.
High-occupancy vehicle project case studies : historical trends and project experiences / Katherine F. Turnbull. -- College Station, Tex. : Texas Transportation Institute, Texas A&M Univereity System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xv, 52 p. : ill. ; 28 cm. -- (Research report ; 925-4)
STRN: FTA/TX-89/1-925-4
1. High occupancy vehicle lanes--United States--Case studies. 2. Bus lanes--United States--Case studies. 3. Traffic congestion--United States.

06 DEC 93 28492936 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--UNITED STATES--CONGRESSES.

HE
131
.T687r
no.1394

Freeway operations and high-occupancy vehicle systems / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
72 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1394)
ISBN 0-309-05463-X

1. High occupancy vehicle lanes--United States--Congresses. 2. Express highways--United States--Congresses.

22 NOV 93 28675985 TLBAsc 93-2963

HIGH SPEED GROUND TRANSPORTATION--GOVERNMENT POLICY--UNITED STATES.

TF
1600
.M42
B53
1993

Mead, Kenneth M.
High speed ground transportation : financing issues : statement of Kennet M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Committee on Appropriations, Subcommittee on Transportation, United States Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
13, [4] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-93-14)
1. High speed ground transportation-Government po licy--United States.

06 DEC 93 27731864 TLBAsc

HIGH TECHNOLOGY INDUSTRIES--MASSACHUSETTS.

HC
107
.M4
M372
1984

Massachusetts high tech : the promise and the reality / The High Tech Research Group. -- [S.l.] : High Tec Research Group, 1984.
80 p. : ill. ; 28 cm.

1. Technology--Massachusetts. 2. Electronic industries--Massachusetts. 3. High technology industries--Massachusetts.

06 DEC 93 11810885 TLBAsc

HIGHWAY ENGINEERING--RESEARCH.

HE
131
.T687c
no.414

Human factors research in highway safety. -- Washington, D.C. : National Academy Press, 1993.
54 p. : ill. ; 28 cm. -- (Transportation research circular ; no 414)

1. Highway engineering--Research. 2. Highway engineering--Safety measures. 3. Traffic safety--Research.

22 NOV 93 29209196 TLBAsc

INTERNET (COMPUTER NETWORK)

TK
5105.875 Kehoe, Brendan P.
.I57 Zen and the art of the Internet : a
K43 beginner's guide / Brendan P. Kehoe. --
1993 2nd ed. -- Englewood Cliffs, NJ : PTR Prentice Hall, c1993.
xv, 112 p. ; 23 cm. -- (Prentice Hall series in innovative technology)
ISBN 0-13-010778-6

1. Internet (Computer network)

17 NOV 93 26096506 TLBAsc 92-18075

LOCAL TRANSIT--TECHNOLOGICAL INNOVATIONS--CONGRESSES.

HE
131 National Conference on Advanced
.T687c Technologies in Public
no.410 Transportation (1992 : San Francisco, Calif.)
National Conference on Advanced Technologies in Public Transportation : conference proceedings : August 16-19, 1992, the Westin St. Francis Hotel, San Francisco, California. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
115 p. : ill. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 410)
1. Local transit--Technological innovations--Congresses. 2. Bus lines --Technologic al innovations-- Congresses.

22 NOV 93 28696145 TLBAsc

LOCAL TRANSIT--UNITED STATES--FINANCE.

HE
4351 Mead, Kenneth M.
.M42 Mass transit : significant federal
M373 investment is not adequately protected
1991 / statement for the record by Kenneth M. Mead. -- [Washington, D.C.] : U.S. General Accounting Office, [1991]
19 leaves : charts ; 28 cm. -- (Testimony ; GAO/T-RCED-91-68)

1. Local transit--United States--Finance. 2. Federal aid to transportation--United States. 3. United States. Urban Mass Transportation Administration.

06 DEC 93 24343197 TLBAsc

LOCAL TRANSIT--UNITED STATES--FINANCE.

HE
4351 United States. General Accounting
.U54 Office.
M373 Mass transit grants : if properly
1992 implemented, FTA initiatives should improve oversight : report to selected members of Congress / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
64 p. ; 28 cm.

1. Local transit--United States--Finance. 2. Federal aid to transportation--United States. 3. United States. Federal Transit Administration--Management.

06 DEC 93 27025615 TLBAsc

LOCAL TRANSIT--UNITED STATES--PLANNING.

HE
4351 Mead, Kenneth M.
.M42 Mass transit : FTA's projections
M374 could better reflect state and local
1993 needs : statement of Kenneth M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Committee on Appropriations, Subcommittee on Transportation, United States Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
7, [2] p. ; 28 cm. -- (Testimony ; GAO/T-RCED-93-17)

06 DEC 93 27862941 TLBAsc SEE NEXT C

LOGAN INTERNATIONAL AIRPORT (MASS.) PLANNING.

HE
9797.6 Boston-Logan International Airport :
.B7 final generic environmental impact
P527 report / prepared for Massachusetts
1993 Port Authority ; prepared by Vanasse Hangen Brustlin, Inc. ... [et al.]. -- [Watertown, Mass.] : Vanasse Hangen Brustlin, Inc., 1993.
5 v. : ill., maps, plans ; 28 cm.

1. Logan International Airport (Mass.)--Planning. 2. Logan International Airport (Mass.)--Environmental aspects. 3. Airports--Massachusetts--Boston Metropolitan Area--Planning.

Rev-1 11-9-93 TLBAsc

MIANUS RIVER BRIDGE (GREENWICH, CONN.)

TG
470 The Mianus River Bridge collapse, Jun
.M52 28, 1983 : an oral history. --
1992 Greenwich, Conn. : Greenwich Librar c1992.
viii, 134 leaves : ill. ; 28 cm.

1. Mianus River Bridge (Greenwich, Conn.) 2. Bridge failures--Connecticut--Mianus River. 3. Bridge --Accidents--Mianus River--June 28, 1983.

06 DEC 93 28861093 TLBAsc

MOTOR VEHICLE SCALES.

TL
154 Cunagin, Wiley D.
.W4 Development of low cost piezoelectri
C862 film WIM system / Wiley D. Cunagin, Said O. Majdi, and Heon Y. Yeom ; sponsored by Texas Department of Transportation. -- Rev. October 1991. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. Available through the National Technical Information Service, 1991]
vi, 30 p. : ill. ; 28 cm. -- (Research report ; 1220-1F)
STRN: TX-93/1220-1F
1. Piezoelectric devices. 2. Trucks --Weight--Measurement--Electronic equipment. 3 . Motor vehicle scales.

08 DEC 93 28661987 TLBAsc

PAVEMENTS, ASPHALT--ADDITIVES.

TE
270
.S78
E923
1993

Stuart, K. D.
Evaluation of natural sands used in asphalt mixtures / [K.D. Stuart and W.S. Mogaver]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
iv, 54 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-070

1. Pavements, Asphalt--Additives. 2. Pavements, Asphalt--Testing. 3. Sand. 4. Aggregates (Building materials)

08 DEC 93 28532436 TLBAsc

PAVEMENTS--DESIGN AND CONSTRUCTION.

HE
131
.T687sy
no.189

Foreyth, Raymond A.
Pavement structural design practices / Raymond A. Foreyth. -- Washington, D.C. : National Academy Press, 1993.
45 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 189)
ISBN 0-309-05314-5

1. Pavements--Design and construction.

10 DEC 93 29411008 TLBAsc 93-60778

PAVEMENTS--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1388

Rigid and flexible pavement design and rehabilitation : a peer-reviewed publication of the Transportation Research Board / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
vii, 210 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1388)
ISBN 0-309-05457-5

1. Pavements--Design and construction. 2. Pavements--Maintenance and repair.

22 NOV 93 28339818 TLBAsc 93-8033

PAVEMENTS--LIVE LOADS--TESTING.

TE
251.5
.S46
E33
1993

Seng, Chia-Ray.
Effect of depth to bedrock on the accuracy of backcalculated moduli obtained with dDynaflect and FWD tests / by Chia-Ray Seng, Kenneth H. Stokoe, Jose M. Roesset ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 116 p. : ill. ; 28 cm. -- (Research rep ort ; 1175-5)
STRN: FHWA/ TX-93+1175-5

09 DEC 93 28860198 TLBAsc SEE NEXT CRD

PAVEMENTS--LIVE LOADS--TESTING.

TE
250
.T53
M42
1992

Tielking, John T.
Measurement of tire footprint pressures / by John T. Tielking and Moises A. Abraham ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
vi, 34 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1184-3F)
STRN: FHWA/ TX-92/1184-3F

06 DEC 93 27662448 TLBAsc SEE NEXT C

PAVEMENTS--PERFORMANCE.

HE
131
.T687n
no.353

Effects of heavy-vehicle characteristics on pavement response and performance / T.D. Gillespie ... [et al.]. -- Washington, D.C. : Transportation Research Board, National Research Council, 1993.
126 p. : ill. ; 28 cm. -- (National Cooperative Highway Research program report, ISSN 0077-5614 ; 353)
ISBN 0-309-05351-X

1. Pavements--Performance. 2. Pavements--Live loads. 3. Trucks--Weight.

Rev-1 12-08-93 TLBAsc 93-601

PAVEMENTS--PERFORMANCE.

HE
131
.T687r
no.1384

Strength and deformation characteristics of pavement structures : pavement design, management, and performance / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 99 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1384)
ISBN 0-309-05454-0

1. Pavements--Performance. 2. Pavements--Testing. 3. Pavements--Design and construction.

22 NOV 93 28292262 TLBAsc 93-2310

PAVEMENTS--UNITED STATES--MATHEMATICAL MODELS.

TE
251.5
.I57
1993

An Integrated model of the climatic effects on pavements / R.L. Lytton ... [et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xv, 289 p. : ill. ; 28 cm.
STRN: FHWA-RD-90-033

1. Pavements--United States--Mathematical models. 2. Pavements--United States--Maintenance and repair--Mathematical models. 3. United States--Climate--Data bases.

09 DEC 93 29378329 TLBAsc

RAILROADS--UNITED STATES--COMMUTING TRAFFIC--EVALUATION.

HE
2741
.S53
C65
1992

Shen, L. David.
Commuter rail state-of-the-art : a study of current systems : final report / prepared by L. David Shen and Jer-Wei Wu. -- Washington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, [1992]
vii, 97 p. : ill. ; 28 cm.

1. Railroads--United States--Commuting traffic--Evaluation. 2. Railroads--United States--Commuting traffic--Planning. 3. Local transit--United States--Evaluation.

08 DEC 93 27643705 TLBAec

ROADS--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1363

Scenic byways. -- Washington, D.C. : National Academy Press, 1992.
v, 24 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1363)
ISBN 0-309-05401-X

1. Roads--Design and construction. 2. Roadside improvement.

10 DEC 93 26674111 TLBAsc 92-306

ROAD MARKINGS--TESTING.

TE
203
.U45
R43
1992

Ullman, Gerald L.
Retroreflective raised pavement marker field testing : initial interim report / by Gerald L. Ullman. -- Rev. Dec. 1992. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
x, 84 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1946-1)
STRN: TX-92/1946-1
1. Road markings--Testing. 2. Reflectors (Safety devices)--Testing.

08 DEC 93 27802354 TLBAsc

ROADS--GUARD FENCES--EVALUATION.

TG
153
.R3
B64
1992

Bligh, Roger P.
Evaluation of bridge approach rails final report / prepared by Roger P. Bligh, Dean L. Sicking, Lance Bullard (Texas Transportation Institute). -- Phoenix, Ariz. : Arizona Dept. of Transportation ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
ix, 173, A-10, B-1 p. : ill. ; 28 cm
STRN: FHWA-AZ92-329

1. Roads--Guard fences--Evaluation. 2. Roads--Safety measures--Evaluation 3. Bridge railings--Evaluation.

08 DEC 93 28919948 TLBAsc

ROADS--CRASH CUSHIONS--TESTING.

TE
228.2
.B43
D48
1992

Beason, W. Lynn.
Development of an end treatment for a low-profile concrete barrier / by W. Lynn Beason ; with contributions by M.L. Marek ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 74 p. : ill. ; 28 cm. -- (Research report ; 2-8-92-1949)
STRN: TX-92/1949-2
1. Roads--Crash cushions--Testing. 2. Roads--Guard fences--Testing. 3. Roads--Safety measures.

08 DEC 93 27802379 TLBAsc

ROADS--INTERCHANGES AND INTERSECTIONS--DESIGN.

HE
131
.T687r
no.1385

Intersection and interchange design. Washington, D.C. : National Academy Press, 1993.
vii, 171 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1385)
ISBN 0-309-05456-7

1. Roads--Interchanges and intersections--Design.

22 NOV 93 28336721 TLBAsc 93-216

ROADS--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1389

Innovations in construction. -- Washington, D.C. : National Academy Press, 1993.
v, 45 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1389)
ISBN 0-309-05459-1

1. Roads--Design and construction. 2. Bridges--Design and construction. 3. Construction industry--Automation. 4. Pavements, Asphalt.

22 NOV 93 28422872 TLBAec 93-26667

ROADS--SAFETY MEASURES.

HE
131
.T687sy
no.191

Harwood, D. W. (Douglas W.)
Use of rumble strips to enhance safety / Douglas W. Harwood. -- Washington, D.C. : National Academy Press, 1993.
74 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 191)
ISBN 0-309-05315-3

1. Roads--Safety measures. 2. Traffic safety.

10 DEC 93 28342853 TLBAsc 93-852

ROADS--SNOW AND ICE CONTROL.

HE
131
.T687r
no.1387

Snow removal and ice control technology : papers presented at a Symposium, September 14-18, 1992, Minneapolis, Minnesota / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
ix, 235 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1387)
ISBN 0-309-05458-3

1. Roads--Snow and ice control.

22 NOV 93 28376209 TLBAsc 93-25662

RURAL TRANSIT--UNITED STATES--MANAGEMENT--HANDBOOKS, MANUALS, ETC.

HE
5613.2
.W24
R87
1992

Walther, Erskine S.
Ruralization of risk management : a handbook for small transit operators : final report / prepared by Erskine S. Walther. -- Washington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1992]
iv, 138, [13] p. ; 28 cm.

23 DEC 93 27643700 TLBAsc SEE NEXT CRD

SCOUR AT BRIDGES--MEASUREMENT.

TG
320
.M54
B74
1992

Miller, Arthur C.
Bridge scour prediction methods applicable to streams in Pennsylvania / Arthur C. Miller, Dennis Johnson, Richard Steinhart. -- University Park, Pa. : Environmental Resources Research Institute, The Pennsylvania State University. [Springfield, Va. : Available from the National Technical Information Service], 1992.
xiii, 155 p. : ill. ; 28 cm.

1. Scour at bridges--Measurement. 2. Bridges--Pennsylvania--Foundations and piers.

08 DEC 93 28916655 TLBAsc

SLURRY TRENCH CONSTRUCTION.

TA
775
.X38
S68
1994

Xanthakos, Petros P.
Slurry walls as structural systems / Petros P. Xanthakos. -- New York : McGraw-Hill, c1994.
xvi, 855 : ill. ; 24 cm.
ISBN 0-07-072216-1 (alk. paper)

1. Slurry trench construction. 2. Diaphragm walls--Design and construction. 3. Concrete walls--Design and construction.

17 NOV 93 28708656 TLBAsc 93-31724

SOILS--PENNSYLVANIA--TESTING.

TA
710.5
.K66
G84
1993

Knott, David L.
Guide for foundation engineering in Pennsylvania karst / David L. Knott, Luis F. Rojas-Gonzalez, F. Barry Newman. -- [Harrisburg : Pennsylvania Dept. of Transportation, Office of Research and Special Studies ; Springfield, VA. : Available through the National Technical Information Service, 1992]
191 p. in various pagings : ill., maps ; 28 cm.

1. Soils--Pennsylvania--Testing. 2. Pavements--Pennsylvania--Subgrades. 3 Karst--Pennsylvania.

08 DEC 93 29426770 TLBAsc

STORM WATER RETENTION BASINS.

HE
131
.T687sy
no.174

Yu, Shaw L.
Stormwater management for transportation facilities / Shaw L. Yu -- Washington, D.C. : Transportation Research Board, National Research Council, 1993.
81 p. : ill. ; 28 cm. -- (Synthesis of highway practice, ISSN 0547-5570 ; 174)
ISBN 0-309-04923-7

1. Storm water retention basins.

22 NOV 93 28916258 TLBAsc 91-6612

STREETS--DESIGN.

Oversize
NA
9053
.S7
J32
1993

Jacobs, Allan B.
Great streets / Allan B. Jacobs. -- Cambridge, Mass. : MIT Press, c1993.
ix, 331 p. : ill., maps ; 31 cm.
ISBN 0-262-10048-7

1. Streets--Design. 2. Architecture--Human factors. 3. Urban beautification. 4. Pedestrian areas. 5. City planning.

09 DEC 93 27677994 TLBAsc 93-2205

TRAFFIC ASSIGNMENT--MATHEMATICAL MODELS.

HE
336
.T68
146
1992

Implementation of an equilibrium capacity restraint model in the Texa Large Network Assignment Package / b Charles E. Bell ... [et al.] ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
x, 143 p. ; 28 cm. -- (Research report ; no. 1153-6F)
STRN: FHWA/ TX-90/1153-4

09 DEC 93 28090783 TLBAsc SEE NEXT CR

TRAFFIC ENGINEERING--CONGRESSES.

HE
332
.M32
1987

Management and control of urban traffic systems : proceedings of the Engineering Foundation conference, New England College, Henniker, New Hampshire, June 14-19, 1987 / Sam Yagar, conference co-chairman and editor ; sponsored by Engineering Foundation. -- [New York, NY : The Foundation ; S.l.] United Engineering Trustees, Inc., c1988.
vi, 400 p. : ill. ; 26 cm.
ISBN 0-939204-35-5

1. Traffic engineering--Congresses. 2. Traffic signs and signals--Congresses.

06 DEC 93 29267583 TLBAsc 88-80874

TRAFFIC FLOW--DATA PROCESSING.

HE
336
.T7
D34
1993

Dailey, Daniel J.
Improved error detection for inductive loop sensors / by Daniel J. Dailey (Washington State Transportation Center). -- [Olympia, Wash.] : Washington State Dept. of Transportation ; [Springfield, VA : Available through the National Technical Information Service, 1993]
ii, 22 p. : ill. ; 28 cm.
STRN: WA-RD 300.1

1. Traffic flow--Data processing. 2. Travel time (Traffic engineering)--Data processing. 3. Traffic surveys--Data processing.

09 DEC 93 28318525 TLBAsc

TRAFFIC FLOW--TEXAS--DALLAS.

HE
336
.C64
W34
1992

Walters, Carol H.
Methodology for assessing feasibility of bottleneck removal / by Carol H. Walters, Christopher M. Poe, Douglas A. Skowronek ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 35 p. : ill. ; 28 cm. -- (Research report ; 1232-17)
STRN: FHWA/ TX-93/1232-17

06 DEC 93 28662001 TLBAsc SEE NEXT CRD

TRAFFIC SIGNS AND SIGNALS.

HE
131
.T687ey
no.186

Bowman, Brian, 1946-
Supplemental advance warning devices / Brian L. Bowman. -- Washington, D.C. : National Academy Press, 1993.
83 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 186)
ISBN 0-309-05314-5

1. Traffic signs and signals. 2. Traffic safety.

10 DEC 93 29410997 TLBAsc 93-86257

TRANSPORTATION AND STATE--UNITED STATES.

HE
4351
.U54
M37
1993

United States. General Accounting Office.
Mass transit : needs projections could better reflect future costs : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
32 p. ; 28 cm.

1. Transportation and state--United States. 2. Local transit--United States--Finance.

06 DEC 93 27784025 TLBAsc

TRANSPORTATION--FINANCE.

HE
131
.T687r
no.1385

Finance, taxation, pricing, economic analysis, socioeconomics, education, and management / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
vii, 199 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1385)
ISBN 0-309-05465-6

1. Transportation--Finance. 2. Toll roads. 3. Roads--Finance.

10 DEC 93 29373995 TLBAsc

TRANSPORTATION--UNITED STATES--CONGRESSES.

HE
131
.T687s
no.240

ISTEA and intermodal planning : concept, practice, vision : proceedings of a conference / Transportation Research Board. -- Washington, D.C. : National Academy Press, 1993.
vi, 171 p. : ill. ; 23 cm. -- (Special report ; 240)
ISBN 0-309-05452-4

1. Transportation--United States--Congresses. 2. Transportation and state--United States--Congresses. 3. Transportation--United States--Planning--Congresses.

22 NOV 93 28294573 TLBAsc 93-868

TRUCKS--ACCIDENTS--RESEARCH--UNITED STATES.

HE
5616
.G37
A22
1992

Garber, Nicholas J.
Accident characteristics of large trucks on highway ramps / by Nicholas J. Garber, Mashrur A. Chowdhury, and Ravi Kalaputapu. -- Charlottesville, V : School of Engineering and Applied Science, Dept. of Civil Engineering, 1992.
iv, 46 p. : ill. ; 28 cm.

1. Trucks--Accidents--Research--United States.

06 DEC 93 27843899 TLBAsc

UNITED STATES--ECONOMIC POLICY--1981-1993.

HC
106.8
.U54
Y57
1993

United States. President (1993- : Clinton)
A vision of change for America. -- Washington, DC : [Executive Office of the President, Office of Management and Budget] : For sale by the U.S. G.P.O., Supt. of Docs, [1993]
iii, 145 p. : ill. ; 28 cm.
ISBN 0-16-041662-0

1. United States--Economic policy--1993- 2. United States--Economic conditions--1993- 3. United States--Economic policy--1981-1993. 4. United States--Appropriations and expenditures. 5. Budget--United States.

08 DEC 93 27466003 TLBAsc

UNITED STATES--OFFICIALS AND EMPLOYEES--DRUG TESTING--COSTS--EVALUATION.

JK
850
.D77
A338
1992

United States. General Accounting Office.
Employee drug testing : opportunities exist to lower drug-testing program costs : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
18 p. ; 28 cm.

08 DEC 93 27191937 TLBAsc SEE NEXT CRD

UNIX (COMPUTER OPERATING SYSTEM)

QA
76.8
.U65
T62
1993

Todino, Grace.
Learning the UNIX operating system / Grace Todino, John Strang, Jerry Peek. -- 3rd ed. rev and expanded / by Jerry Peek. -- Sebastopol, Calif. : O'Reilly & Associates, 1993.
xv, 92 p. : ill. ; 23 cm.
ISBN 1-56592-060-0

1. UNIX (Computer operating system) 2. Operating systems (Computers)

06 DEC 93 28885375 TLBAsc

URBAN TRANSPORTATION--UNITED STATES--PLANNING--CONGRESSES.

HE
131
.T687s
no.237

Moving urban America : proceedings of a conference, Charlotte, North Carolina, May 1992 / conducted by Transportation Research Board. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1993.
x, 164 p. : ill. ; 23 cm. -- (Special report ; 237)
ISBN 0-309-05405-2

1. Urban transportation--United States--Planning--Congresses. 2. Urban transportation--United States--Congresses.

22 NOV 93 26976840 TLBAsc 92-35101

WALKING--RESEARCH.

HE
131
.T687r
no.1396

Nonmotorized transportation research and issues : operations and safety; planning and administration / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 80 p. : ill., maps ; 28 cm. -- (Transportation research record ; no. 1396)
ISBN 0-309-05469-9

1. Walking--Research. 2. Pedestrians--Research. 3. Cycling--Research.

10 DEC 93 29453821 TLBAsc

WATER-SUPPLY ENGINEERING--STANDARDS.

REF.
TD
351
.A43
A59

American Water Works Association.
AWWA standards. New York, The Association.
v. 24 cm.

1. Water-supply engineering--Standards.

18 NOV 93 2125656 TLBAsc NUC73-818

WATERFRONTS--UNITED STATES--CASE STUDIES.

HT
167
.B679
1993

Breen, Ann.
Waterfronts : cities reclaim their edge / by Ann Breen and Dick Rigby. -- New York : McGraw-Hill, 1993.
xiv, 333 p. : ill. (some col.), maps ; 28 cm.
ISBN 0-07-068458-8

1. Waterfronts--United States--Case studies. 2. Waterfronts--United States--Design and construction--Case studies. 3. City planning--United States--Case studies. 4. Urban renewal--United States.

23 DEC 93 28065533 TLBAsc 93-1076

AMERICAN DEMOGRAPHICS

DECEMBER 1993 VOL. 15, NO. 12 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

Special Report

The Future of Households 27

Household growth goes up and down like a statistical roller coaster. With the exclusive projections for 9 household types in this special report, you'll know the twists and turns your markets will take in the next 20 years. ..... *by The Editors*

The Year Ahead 42

The hottest products of 1994 will take existing products one step further. Productivity-obsessed businesses will embrace desktop sales calls, while convenience-driven consumers will choose retailers who shop for them. The overall theme: forward, but not too fast. ..... *by Kim Long*

Giving and Getting 46

Americans' favorite gift is money, followed by travel. After that, the right gifts for men and women are very different. Men want tools, and women want jewelry. Overall, women may be more satisfied with their gifts than men are. ..... *by Sherri Athay*

BUSINESS REPORTS

Gift-Giving Styles 9

The Marlboro Man Is Really a Troubled Teen 12

Reaching Movers Before the Big Day 14

Helping Renters Make the Down Payment 21

Wal-Mart Turns Green in Kansas 23

High-Tech Fries and Computer Campouts 25

DEPARTMENTS

Editorial
The Question Channel 2

Seasons
'Tis the Mail Season 4

Dear Dr. Demo
Career Hopping 6

Letters 58

Demographic Forecasts
Spelling R-E-L-I-E-F 59

New Frontiers
Growth in the 1990s 60

AMERICAN DEMOGRAPHICS INC. 127 W. STATE ST. ITHACA, NY 14850 TELEPHONE 1-800-828-1133



22



34



42



50

AMERICAN DEMOGRAPHICS

JANUARY 1994 VOL. 16, NO. 1 A PUBLICATION OF DOW JONES & COMPANY, INC.

FEATURES

The Arab-American Market 22

Americans of Arab origin are more educated, younger, and more affluent than average. The vast majority are citizens. They are also likely to be entrepreneurs, so they are particularly important for business-to-business marketing. ..... *by Samia El-Badry*

Targeting Hunters 34

In 1991, 40 million Americans hunted or fished for wild animals. Sportsmen support a $41 billion industry that sells everything from camouflage suits to cable television. They are a diverse and conservation-minded market. ..... *by Diane Crispell*

Change Leaders and the New Media 42

Change leaders are consumer explorers who embrace and popularize media innovations such as online shopping and interactive television. By understanding their needs, you can predict mainstream media trends. ..... *by Bruce MacEvoy*

How to Figure Kids 50

Forecasting the child population in local markets is crucial for school officials, and also for businesses that target families. A recent forecast for Palo Alto contains a surprising rule: to predict the number of children, forecast the number of elderly women. ..... *by Shelley Lapkoff*

BUSINESS REPORTS

African Immigrants Who Aren't Black 9

Understanding Islamic Americans 10

Do Low Prices Bore Shoppers? 11

Small Business Takes a Licking, Keeps Ticking 14

The Gender Gap at the PC Keyboard 18

Attitude (Not Age) Defines the Mature Market 18

DEPARTMENTS

Editorial
New Keys To Customer Loyalty ... 2

Seasons
For the Birds 4

Multimedia
Future Focus Groups 6

Letters 54

Demographic Forecasts
Getting Home 55

New Frontiers
The Uninsured 56

AMERICAN DEMOGRAPHICS INC. 127 W. STATE ST. ITHACA, NY 14850 TELEPHONE 1-800-828-1133

COMMUNICATION ARTS
Volume 35, Number 7
1993 ADVERTISING ANNUAL

7 CONSUMER MAGAZINE ADS
55 CONSUMER NEWSPAPER ADS
73 TRADE ADS
96 POSTERS
119 SALES PROMOTION
120 SELF-PROMOTION
123 PUBLIC SERVICE
142 RADIO COMMERCIALS
146 TELEVISION COMMERCIALS

TECHNOLOGY

205 TECHNOLOGY *San Francisco-based Frame, Cone & Belding's Digital Imaging Studio.*
214 DESIGN TECHNOLOGY *Wendy Richmond explains why the laws of design needs to be maintained in new forms.*
218 CONFERENCE REVIEW *Richard Kamins reviews the latest Seybold conference in San Francisco.*
220 TECHNOLOGY REVIEWS *Sam McMillan compares software for managing a creative business.*
229 TECHNOLOGY RESOURCES *Books, magazines, newsletters, seminars and museums*

COLUMNS

235 ADVERTISING *Tim Manahan discusses the creative director's role in fostering great creative.*
241 DESIGN ISSUES *Cecilia Heilland on the democratization of society and its impact on book cover design.*
246 OPINION/COMMENTARY *A 52-year-old editorial on advertising by Howard Gossage is surprisingly current.*
250 LEGAL AFFAIRS *Attorney Lee Wilson provides a law primer concerning false advertising.*
259 FREE-LANCE *Barbara Gordon discusses creating a multi-faceted portfolio.*

DEPARTMENTS

188 EDITOR'S COLUMN
194 CONTRIBUTORS
198 LETTERS TO THE EDITOR
262 BOOK REVIEWS
268 MATERIALS, AVAILABLE LITERATURE
275 PHOTOGRAPHY CALL FOR ENTRIES
280 CLUBS, CONFERENCES, SEMINARS
282 INDEX TO THE ADVERTISING ANNUAL

CONTENTS

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 DECEMBER 1993

NEWS

AIRPORTS
New taxes threaten air transport co-operation 3

INDUSTRY
InterAirport '95 Show still up in the air 4

ATC
Europe studies means to access GPS market; ATC contracts 7

NEW PRODUCT REVIEW
Airfield lighting; ATC; Radar/communications recording; Aircraft towbarless tractors; Loaders 9

AIRPORTS

FINANCE
How routes create wealth 13

EMERGENCY MANAGEMENT
How to handle bad news 15

OPENING TIMETABLE
Denver delays and relieves 18

FRENCH RAILWAYS
TGV presents problems 21

AIRBASE CONVERSION
Civil future for military bases 23

ATC

DATA EXCHANGE
Europeans swop radar data 26

BUYER'S GUIDE

Centralised systems (400Hz, air start, pre-conditioned air) and ground power units/frequency converters 29

INTERVIEW

MD BAA INTERNATIONAL PLC
Roger Kitley 32

Front cover: The China Airlines aircraft that overran the runway and crashed into the harbour in Hong Kong last month caused no fatalities and no serious injury. This information, however, needs to be conveyed as quickly as possible to the media and relatives of the passengers in order to avoid any confusion and unnecessary anguish. *See story page 15.*

NEXT MONTH

The January/February issue will include the following features:

- The ATC market worldwide: a comprehensive annual guide to the world market for ATC products.
- The Middle East: a look at airline, airport and ATC developments throughout the region, with special reports from Yemen, the Gulf and Jordan.
- ATC '94 Exhibition & Conference preview: a report on the conference programme and the new products on display at Europe's premier ATC show.
- Ramp safety: a look at how Frankfurt airport has developed new procedures, training and equipment to reduce aircraft and ground vehicle incidents on the ramp.

METRO Magazine

a bobit publication serving surface mass transportation for 89 years

NOVEMBER / DECEMBER 1993
Vol. 89 No. 7

Features

Feds Promise Transit a Full Yule Stocking 18
Industry's largest gathering ever stresses intermodalism. APTA trade show, meeting draw more than 15,000 to New Orleans.

Bus of the Future, Part 3: Rethinking More Than the Bus 26
Manufacturers from all over the world are in a breakneck race to offer the next-generation bus to North American operators.

A Day in the Life of an Intelligent Bus 34
Chicago project shows IVHS improves operating performance and benefits passengers, drivers and management.

***METRO's* 1994 Pullout Wall Calendar** 39
Transit, motorcoach and other events listed for the new year.

Linton's Goal: Build Coalitions, Forge Seamless U.S. Transit Net 67
New FTA administrator promises more support for transit, more local decision-making, defense conversion for buses.

Consumer Reports



765

IN THIS ISSUE

December 1993 Volume 58, No. 12

765 How to buy a fragrance
To help you choose, for yourself or for another, we tested some 83 women's and men's fragrances.

775 Rack stereo systems
They can be an economical alternative to separate components.

783 Best Buy Gifts
Our annual roundup of products that have done well in recent tests.

790 Breadmakers
They're pricey, but they make good bread. We tested the major brands, in sizes for big loaves and small.

796 Pocket knives
There are hundreds styled on the "Swiss Army Knife." Here's how to pick one to fit your pocket (and your pocketbook).

800 Good choices in hi-fi components
Recommendations for receivers, speakers, CD players, tape decks.

802 Your shopping rights
Knowing the law can help you avoid post-holiday hassles.

807 SLR cameras and zoom lenses
Tests of sophisticated cameras and lenses for those who want to move beyond the world of point-and-shoot.

816 Tiny TV sets
The small ones are easy to carry from room to room. The smaller ones, with battery power, are designed to travel.



796



790



807

DEPARTMENTS:

MEMO TO MEMBERS	759	MOVIES	820
LETTERS	760	BRANDS: WHERE TO CALL	821
ONCE OVER	762	INDEX AND FAX NUMBERS	822
A QUESTION OF HEALTH	782	SELLING IT	823
POCKET GUIDE TO MONEY	804		

IN FUTURE ISSUES



Mid-priced sedans Next month, a road-test report on the Toyota Camry, Mazda 626, Mitsubishi Galant, and Honda Accord.

Home Electric drills ■ Gas ranges ■ Garage-door openers ■ Top-freezer refrigerators ■ Drain cleaners ■ Food wraps ■ Garbage bags ■ In-sink disposers **Foods** Bread ■ Butter/margarine **Health** Alternative medicine ■ Radial keratotomy ■ Antacids **Electronic gear** 27-inch TV sets ■ VCRs ■ Stereo receivers ■ Loudspeakers ■ Recording decks ■ CD players ■ Camcorders **Autos** Tires ■ Buick Regal Gran Sport, Dodge Intrepid ES, Oldsmobile Cutlass Supreme SE, Pontiac Grand Prix

mlr

Monthly Labor Review

November 1993
Volume 116, Number 11

Deborah P. Klein, *Editor-in-Chief*
Anna H. Hill, *Acting Executive Editor*

The American work force, 1992–2005

Articles

3 **Historical trends, 1950–92, and current uncertainties**
Many influences have shaped the work force in past decades; recent events heighten uncertainties surrounding current projections
Ronald E. Kutscher

11 **The U.S. economy to 2005: framework for BLS projections**
BLS projects a wide range for gross domestic product, with several key shifts in the composition of its demand components
Norman C. Saunders

31 **Another look at the labor force**
The labor force is expected to increase faster than in the immediate past, with varying rates of growth among racial and Hispanic-origin groups
Howard N Fullerton, Jr.

41 **Industry output and employment**
Services are projected to provide more than half of all new job growth; manufacturing employment is expected to decline
James C. Franklin

58 **Occupational employment: wide variations in growth**
Service workers are expected to be the largest occupational group and professional specialty, the most rapidly growing group
George T. Silvestri

Departments

2 About this issue
87 Major agreements expiring next month
88 Developments in industrial relations
91 Current labor statistics

WATER

Engineering & Management

Vol. 140, No. 12

December 1993

FEATURES

Sludge Disposal Trends Around The Globe
A look at sludge management techniques and systems used currently in Europe, Japan and the United States *17*

SYSTEM PROFILE:
Water Plant Project Battled Flood and Costs
A new water treatment plant in Danville, Illinois was designed and built on a fast-track schedule *21*

Productivity Improvement Program Challenges Old Ways
The Louisville and Jefferson County Metropolitan Sewer District in Kentucky developed a program to provide higher quality wastewater and stormwater services *23*

On-Site Oxygen System Lowers Costs At Wastewater Plant
The upgrade of a wastewater treatment plant included the installation of an on-site oxygen generator system to supply the aeration process *26*

Leaders Discuss Trends
Industry leaders offer their views on future trends in toxics control, environmental management strategies, wastewater operations, and the use of activated carbon *28*

WWS
WORLD WIDE SHIPPING

DECEMBER/JANUARY 1994 Vol. 58, No. 6

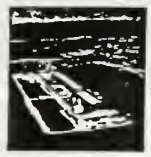
Contents

FEATURES

Columbus Line/Alliance — 76
By JOHN TIRPAK, *Sr. Vice President, Columbus Line, Inc.*
Computers — 20
By ANN MARIE J. McGEE, *Director, Strategic Marketing, Fujitsu Personal Systems, Inc.*
Conferences — 22
By JOEL GREENBERG, *Director, Westbound Export Pricing, American President Lines*
Free Trade — 41
By CARMEN LUNETTA, *Port Director, Port of Miami*
Freeport, Grand Bahama Island — 88
Special to WWS/World Wide Shipping
Insurance — 79
By SAMUEL SCHIFF, *Director, Nat'l Insurance News Service*
Laguna Madre Dredging — 78
By KEN WELLS, *Vice President, American Waterways Operators*
Middle East — 39
By GORDON R.C. WRIGHT, *Sr. Vice President, General Manager, P&O Containers, Ltd.*
Packaging — 19
Special to WWS/World Wide Shipping
Poughkeepsie — 81
By R.M. HALLOCK, *Special to WWS/World Wide Shipping*
U.S. Customs — 14
By DAVID SERKO, *Senior Partner, Serko & Simon, NY,*
Contributing Editor, WWS/World Wide Shipping
and By BARBARA Y. WIERBICKI, Esq.
U.S. Gulf Ports — 57
By ROBERT A. BURNS, *Asst. Executive Director, Mississippi State Port Authority*



Page 65 Port of Galveston



Page 65 Port of Gulfport

WWS/STAFF REPORTS

Automobiles — 16
By WARREN MILLER, *WWS, U.S. Gulf*
Business Outlook — 2
Special to WWS/World Wide Shipping
Connie Award — 25
By PATRICIA B. DEMETRIO, *WWS, Western*
Cuba — 44
By PAUL SCOTT ABBOTT, *WWS, South Atlantic*
Equipment — 86
By RODNEY B. GARRETT, *Special to WWS/World Wide Shipping*
Intermodalism — 29
By PATRICIA B. DEMETRIO, *WWS, Western*
Latin America — 50
By GEORGE ADCOCK, *WWS, Mid-Atlantic*
Latin America — 48
By PAUL SCOTT ABBOTT, *WWS, South Atlantic*
Rijnhaave Information Services, Inc. — 27
By PATRICIA B. DEMETRIO, *WWS, Western*
Trucking — 31
By PATRICIA B. DEMETRIO, *WWS, Western*
U.S. Customs — 13
By PATRICIA B. DEMETRIO, *WWS, Western*
U.S. Gulf Ports — 54
By PATRICIA B. DEMETRIO, *WWS, Western*
U.S./Middle East Trade — 33
By CARLO J. SALZANO, *WWS, Washington, DC*
Washington Report — 6
By CARLO J. SALZANO, *WWS, Washington, DC*



Page 69 Port of Houston



Page 77 Columbus Line

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 11
November 1993

Contents

Articles

14 Technical Note: Standard File Format for System Detector Counts
By Milton I. Dean, Tommy Jeffreys, H.A. Justice and Fred L. Orcutt Jr.
The North Carolina Department of Transportation has developed a standard system detector count capability and a standard count file format to simplify formerly complex programs.

16 Value-Oriented Retail Centers: A Follow-Up Report
By John W. Guckert
Current research shows trip generation for value-oriented super malls is lower than that of their traditional neighborhood counterparts.

21 An Informational Report: Transportation Continuing Education and Professional Development
By ITE Technical Council Committee 2-40
The report draws conclusions based on questionnaire responses about ITE's role as a clearinghouse for continuing education and professional development information.

22 High-Occupancy Vehicle Treatments on Arterial Streets
By Shawn M. Turner
A discussion of how HOV can be implemented and enforced in three different arterial-street scenarios.

30 IVHS and Rural Road Safety: A Prototype ATIS
By Wende A. O'Neill, Kazi Ullah and Miao-hsi Wang
A two-year study in Utah has produced a pilot advanced traveler information system that might be feasibly applied in rural areas.

38 Effect of Truck Weight Enforcement in the Kingdom of Saudi Arabia
By Hamad I. Al-Abdul Wahhab
The Saudi Arabian government moved quickly to protect its highway system from damage caused by truck weight violators.

45 A Proposed Recommended Practice: Speed Zone Guidelines
By ITE Technical Council Committee 4M-25
The committee summarizes its findings on the need and effectiveness of speed zones and solicits comments.

News

12 Washington Report
Gore Report Blasts Demos • DOT Appropriations Delayed • Gas Tax, Trust Fund Balance Continue to Grow • IVHS Operational Tests • ITE Bulletin Board

13 ITE News
Annual Meeting Award Winner Speaks about Dutch Policy

Departments

4 Calendar
9 To the Editor
47 People and the Profession
48 Products
49 Professional Services Directory
56 Positions
62 Advertisers Index

On the cover: Poppy reserve, Antelope Valley, near California. Photo by Norma Watts.

Institute of Transportation Engineers

ITE JOURNAL

Volume 63, Number 12
December 1993

Contents

A Special Issue on Congestion Pricing

Articles

14 International Experiences with Congestion Pricing
By Anthony D. May
An overview of congestion pricing outside the United States that assesses its objectives, types of systems envisaged, benefits and factors leading to its rejection.

22 Effects of Road Access Pricing at the Los Angeles Airport: A Case Study
By Andrew J. Lampe
Recent innovations in automated vehicle identification systems are helping airports like Los Angeles International to control congestion

27 Congestion Pricing: Issues and Opportunities
By Patrick DeCorla-Souza
With proper advanced planning, regionwide congestion pricing is a promising long-term option offering benefits for mobility, the environment and economic efficiency and productivity.

33 Implementing Congestion Pricing: Winners and Losers
By Kiran Bhatt
Although it is a largely untried strategy, congestion pricing might provide long-lasting, more efficient, less inequitable and financially sound means of increasing mobility.

39 U.S. Experience with Congestion Pricing
By Bert Arrillaga
Despite failed attempts in the past, with a well-planned scheme, congestion pricing in the United States is fast becoming a viable option for overcrowded urban areas.

44 Singapore's Road Pricing System: Its Past, Present and Future
By A.P. Gopinath Menon, Soi-Hoi Lam and Henry S.L. Fan
For two decades, Singapore has been implementing a successful congestion pricing system, revising it to reflect the latest technology and current needs of the area.

55 Index of 1993 ITE Publications

News

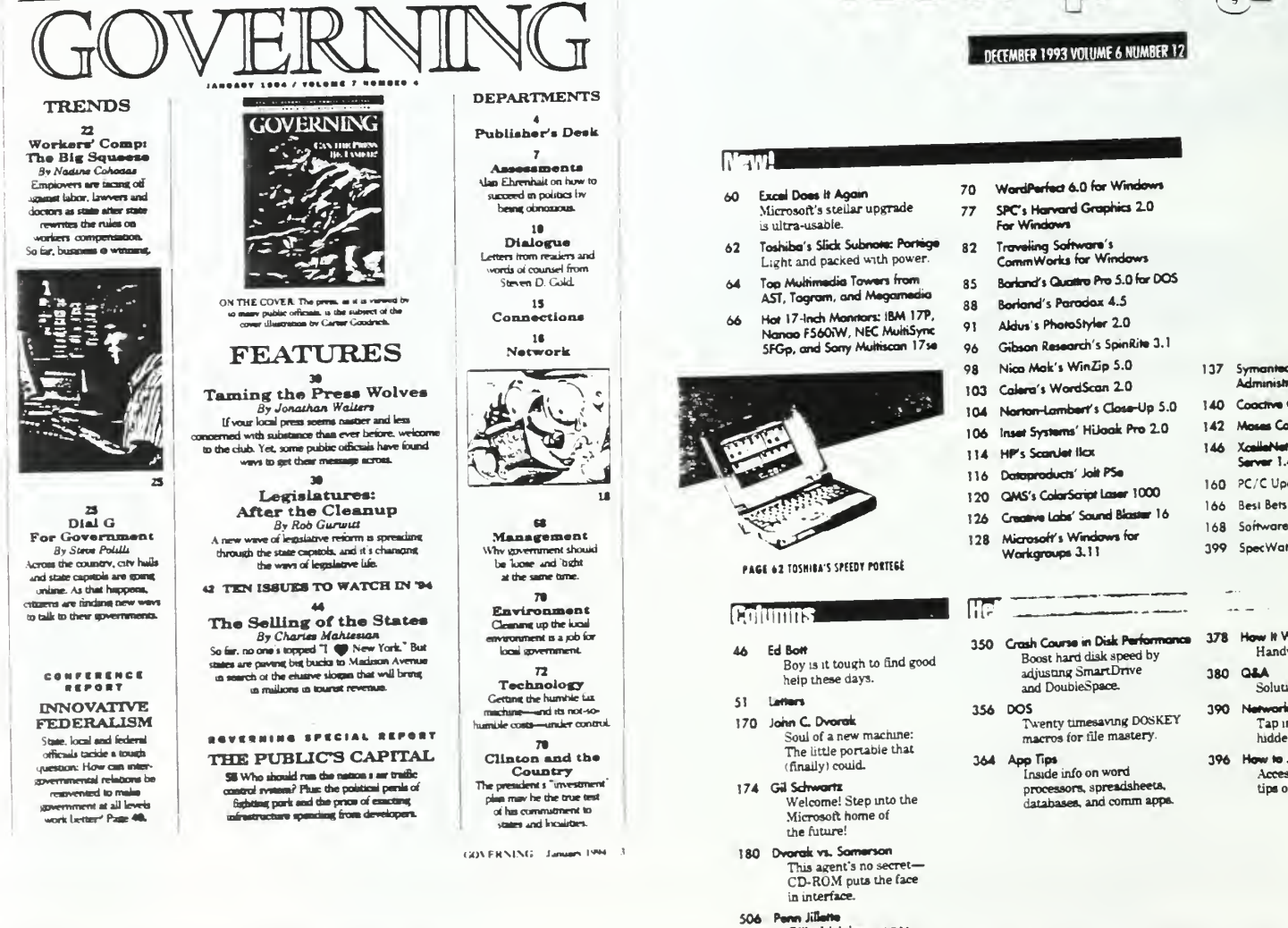
10 ITE News

12 Washington Report
Planning Regulations Issu... Briefings Planned • DOT Appropriations Bill Passe... ITE and Metric Signing

Departments

4 Calendar
6 To the Editor
50 Elections to the Grade o... Fellow
51 People and the Professio...
52 Products
54 Publications
65 Professional Services Directory
72 Positions
78 Advertisers Index

On the cover: Skyline of Minne... lis, Minn. Photo by Norma Wa...



GOVERNING

JANUARY 1994 / VOLUME 7 NUMBER 4

TRENDS

22
Workers' Comp: The Big Squeeze
By Nadine Cohodas
Employers are facing off against labor, lawyers and doctors as state after state rewrites the rules on workers compensation. So far, business is winning.

25
Dial G For Government
By Steve Polilli
Across the country, city halls and state capitols are going online. As that happens, citizens are finding new ways to talk to their governments.

CONFERENCE REPORT
INNOVATIVE FEDERALISM
State, local and federal officials tackle a tough question: How can intergovernmental relations be reinvented to make government at all levels work better? Page 48.

GOVERNING

ON THE COVER: The press, as it is viewed by so many public officials, is the subject of the cover illustration by Carter Goodrich.

FEATURES

30
Taming the Press Wolves
By Jonathan Walters
If your local press seems nastier and less concerned with substance than ever before, welcome to the club. Yet, some public officials have found ways to get their message across.

30
Legislatures: After the Cleanup
By Rob Gurwitt
A new wave of legislative reform is spreading through the state capitols, and it's changing the ways of legislative life.

42 TEN ISSUES TO WATCH IN '94

44
The Selling of the States
By Charles Mahtesian
So far, no one's topped "I ♥ New York." But states are paying big bucks to Madison Avenue in search of the elusive slogan that will bring in millions in tourist revenue.

GOVERNING SPECIAL REPORT
THE PUBLIC'S CAPITAL
58 Who should run the nation's air traffic control system? Plus: the political perils of fighting pork and the price of enacting infrastructure spending from developers.

DEPARTMENTS

4
Publisher's Desk

7
Assessments
Alan Ehrenhalt on how to succeed in politics by being obnoxious.

10
Dialogue
Letters from readers and words of counsel from Steven D. Gold.

15
Connections

16
Network

18

68
Management
Why government should be loose and tight at the same time.

70
Environment
Cleaning up the local environment is a job for local government.

72
Technology
Getting the humble fax machine—and its not-so-humble costs—under control.

78
Clinton and the Country
The president's "investment" plan may be the true test of his commitment to states and localities.

GOVERNING January 1994 3

PAGE 62 TOSHIBA'S SPEEDY PORTÉGÉ

PCComputing

DECEMBER 1993 VOLUME 6 NUMBER 12

News

60 **Excel Does It Again**
Microsoft's stellar upgrade is ultra-usable.

62 **Toshiba's Slick Subnote: Portége**
Light and packed with power.

64 **Top Multimedia Towers from AST, Tagram, and Megamedia**

66 **Hot 17-Inch Monitors: IBM 17P, Nanao F560IW, NEC MultiSync 5FGp, and Sony Multiscan 17se**

70 **WordPerfect 6.0 for Windows**

77 **SPC's Harvard Graphics 2.0 For Windows**

82 **Traveling Software's CommWorks for Windows**

85 **Borland's Quattro Pro 5.0 for DOS**

88 **Borland's Paradox 4.5**

91 **Aldus's PhotoStyler 2.0**

96 **Gibson Research's SpinRite 3.1**

98 **Nico Mak's WinZip 5.0**

103 **Calera's WordScan 2.0**

104 **Norton-Lambert's Close-Up 5.0**

106 **Inset Systems' HiJaak Pro 2.0**

114 **HP's ScanJet IIcx**

116 **Dataproducts' Jolt PSe**

120 **QMS's ColorScript Laser 1000**

126 **Creative Labs' Sound Blaster 16**

128 **Microsoft's Windows for Workgroups 3.11**

137 **Symantec's Norton Administrator for Networks**

140 **Coactive Connector**

142 **Moses Computers' MosesDoc**

146 **XcelleNet's RemoteWare Server 1.41**

160 PC/C Update

166 Best Bets

168 Software Soleswire

399 SpecWatch/Direct to You

Columns

46 **Ed Bott**
Boy is it tough to find good help these days.

51 **Letters**

170 **John C. Dvorak**
Soul of a new machine: The little portable that (finally) could.

174 **Gil Schwartz**
Welcome! Step into the Microsoft home of the future!

180 **Dvorak vs. Somerson**
This agent's no secret—CD-ROM puts the face in interface.

506 **Penn Jillette**
Billy Idol: learning to type in cyberspace.

He...

350 **Crash Course in Disk Performance**
Boost hard disk speed by adjusting SmartDrive and DoubleSpace.

356 **DOS**
Twenty timesaving DOSKEY macros for file mastery.

364 **App Tips**
Inside info on word processors, spreadsheets, databases, and comm apps.

378 **How It Works**
Handwriting recognition.

380 **Q&A**
Solutions to PC riddles.

390 **Networking Smarter**
Tap into your network's hidden strengths.

396 **How to Join PC/Contact**
Access free software and tips on our online forum.

Journal of
Transportation Engineering

Volume 119 Number 6 November/December 1993

TECHNICAL PAPERS

rban Trip Distribution in Practice. I:
nventional Analysis.
Said M. Easa 793

rban Trip Distribution in Practice. II: Quick Response
d Special Topics.
Said M. Easa 816

verall Delay, Stopped Delay, and Stops at
gnalized Intersections.
P. Olszewski 835

ffect of Truck Loads on Bridges.
Andrzej S. Nowak, Hani Nassif, and Leo DeFrain 853

nalysis of Segmentation Algorithms for Pavement
istress Images.
Haris N. Koutsopoulos, Ibrahim El Sanhouri, and
Allen B. Downey 868

eld Test Comparison of Calcium Magnesium Acetate
Salt.
Gregory P. Harris, Robert Turner, and Richard J. Nelson 889

arping Stresses in Concrete Pavements on
sternak Foundation.
X. P. Shi, T. F. Fwa, and S. A. Tan 905

nwanted Legacy of Asphalt Pavement Compaction.
A. O. Abd El Halim, W. A. Phang, and R. C. Haas 914

DISCUSSION

oratory versus Nondestructive Testing for Pavement
sign. William N. Houston, Michael S. Mamlouk, and
han W. S. Perera.
y Fenghe Wu. Closure by authors 934

D OF YEAR INDEX 939

PLANNING
CONTENTS

American Planning Association Vol. 59, No. 11 November 1993

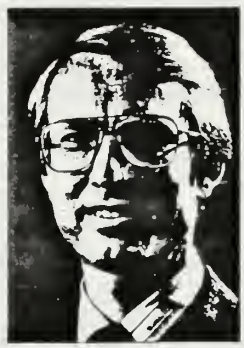
8 **Reflections on *The Use of Land*.** Phyllis Myers assesses the classic book that put the concept of growth management on the map.

12 **Zoning and Subdivision Codes, Unite!** Lessons from four communities with unified development codes—described by Marya Morris in Planning Practice.

17 **South Africa Regroups.** Post-apartheid, planners are making big changes. By Allan Hodges.

22 **Schools 'R' Us.** Can private firms transform the public schools? Ruth Knack seeks an answer. Part of a yearlong series on "America's Cities: What Works."

33



5 **From the Capitals**
30 **Tech**
For the office.
31 **Planning News**
L.A. megaproject.
33 **APA News**
APA names Michael B. Barker, AICP, as executive director.
34 **From the Board**
Reinventing planning.
34 **Letters**
Remembering Is.
36 **Planners Library**
The new urbanism.
39 **Conference Calendar**
40 **Consultant Directory**
46 **Viewpoint**
Bring back the CCC.

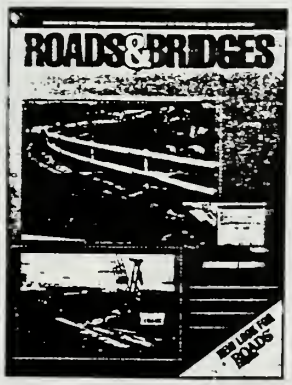
17



Cover: Drawings by the children at South Pointe Elementary School, Miami Beach.

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure



In This Issue

In the November issue, you'll find extensive coverage of **Bridges '94.** You'll also find **Part I** of our coverage of the A/E/C computer show in Anaheim, **winter road maintenance** products, coverage of the **'jointless' bridge** controversy and the application of **4-D Imaging** to the Colorado River Bridge at the Hoover Dam.

Cover: Denver interchange under construction, courtesy Carter & Burgess; so-called expansion "jointless" bridge nears completion, courtesy URS Consultants; and Autodesk's new ADE software links AutoCAD with GIS in shot of San Diego's Coronado Bridge, courtesy American Digital Cartography.

VOL. 31/NO. 11 NOVEMBER 1993

FEATURES

Special Report: BRIDGES '94

30 Conference spotlights newest bridge management systems
ISTEA mandate for bridge management systems spur sponsored conference in Austin

32 '4-D' imaging software aids DOTs in bridge site review
Sophisticated software running on PCs gives workstation performance to engineers seeking to select and site new Colorado River bridge at Hoover Dam

38 Variety of bridges keys massive Colorado interchange
Precast box girders, precast I-beam, cast-in-place, post-tensioned box, girders, and welded steel box girders among assortment in $91 million job

42 Stainless steel hinge pins anchor bridge retrofit
John A. Blatnik Bridge total reconstruction in Duluth will widen I-535 using pier caps, new steel and wear-resistant stainless steel pins

44 Epoxy-coating controversy spurs new materials research
Debate over ability of epoxy coating to protect rebar from corrosion spawns spec changes to reduce defects

48 Segmental arch bridges offer short span option
New technology from France distinguished by quick erection of precast arch elements; larger spans evolving as product is introduced to North America

48 'Jointless' bridges provide fuel for controversy
Do bridges require joints? Yes says engineer of manufacturer; but Colorado engineering firm executes major design using 'expansionless' motif

58 A/E/C 93 is hot spot for software, hardware
Part I of our coverage of largest computer show for engineers and contractors takes you to the civil, structural, and GIS event in June in Anaheim

The American Management Association Magazine

DECEMBER 1993

Management Review



COVER STORY:
10 R&D

Managing the Link To Corporate Strategy

Corporations are bringing research and development out of the dark recesses of their corporate hideaways and into the open.

FEATURES

13 R&D
An R&D Roundtable Members of the American Management Association's Research and Development Council respond to some of the burgeoning questions about third-generation R&D.

25 CASE STUDY
Simplicity Cuts a New Pattern A shrinking customer base and crippling debt forced Simplicity Patterns to cut its company structure from a different fabric.

30 REORGANIZATION
Eliminating Bureaucracy—Roots and All An organization will flourish once the tentacles of bureaucracy are removed from the corporate landscape.



DEPARTMENTS

1 EDITOR'S NOTE
What are the right questions to ask about NAFTA?

4 MEMO FOR MEMBERS
An old Christmas carol imparts new lessons for business.

6 FRONT LINES/AMA RESEARCH
Bitter medicine in healthcare reform....Corporate AIDS policies determined by company experience.... The latest downsizing report from AMA....What's important in employee training....A public relations lesson from General Motors.







The American Management Association Magazine

JANUARY 1994

Management Review

COVER STORY:
10 FACE TO FACE

Juran on Quality

Dr. Joseph M. Juran, a seminal thinker on corporate quality long before the topic became a management buzzword, talks to *Management Review* about benchmarking, competition and what we can look for in business in the 21st century.



FEATURES

14 QUALITY
Can Government Be Reinvented? The White House has committed itself to making government work better and saving $108 billion over five years in the process. But many naysayers believe that the radical changes familiar to corporate America cannot be duplicated by the federal government.

22 QUALITY
Report Card on TQM Total Quality Management has not proven itself to be the instrument of effective, long-lasting change that its proponents once touted. *Management Review* polled consultants, executives and government officials to learn the good, the bad and the future of TQM. Here's what they told us.

26 MARKETING
Siphoning That Coca-Cola Magic Coca-Cola is famous for its secret formula. Not so secret is the marketing strategy that has firmly established the soft drink company's success throughout the 20th century.

38 CASE STUDY
IBM One Day, Lexmark the Next When IBM spun off its printer company, it didn't expect to get a lesson on how to resuscitate a moribund company. But that's what happened: Today, Lexmark is showing its ex-parent how employee empowerment can translate to the bottom line.

48 COMPETITION
The Age of Intangibles A work environment that stresses business relationships and innovation is a work environment that needs new methods of measurement—methods that involve the intellect and the ability to analyze, transmit and synthesize information.

54 TECHNOLOGY
Information Systems Get Back to Basics After years in which computer operations proliferated, organizations are now streamlining their software systems in a new effort to boost productivity and reduce costs.



BOSTON, MA 02116 The Newspaper of Information Systems Management
December 20, 1993. Vol 27. No 51. 104 Pages. $6/Copy. $48/Year

COMPUTERWORLD

Feds try to renovate by rebuilding E-mail

By Gary H. Anthes
WASHINGTON

An electronic mail message sent from the General Services Administration in the Environmental Protection Agency, just a few blocks away, moves from a OSA LAN to a Sprint Corp communications center in Reston, Va. It arrives at an AT&T facility near Brunswick, N.J., only to be sent back to the EPA here, passing through several gateways en route.

The odds are reasonably good that neither snow nor rain nor system crashes will keep the message from completing its appointed round. However, this is not exactly the scheme on which President Clinton would build a government-wide E-mail infrastructure.


GSA's Michael Corrigan

Boosted by the president's "reinventing government" effort, E-mail initiatives are sprouting up all over Washington as federal officials increasingly view mail-enabled applications — electronic commerce, electronic bidding and interpersonal messaging, for example — as a key way to make government more efficient and responsive.

"As in the business world, electronic messaging is becoming cu-

E-mail, page 24

Chicago bulls ahead

Microsoft aims high; developers decry API shortcomings

By Stuart J. Johnston and Ed Scannell

■ Microsoft Corp. officials, laying out operating systems strategies for 5,000 developers last week, boldly predicted that 50 million copies of Windows 4.0 will ship the first year the product is available.

But with the product, code-named Chicago, still awaiting a finished set of application programming interfaces, some developers attending Microsoft's Professional Developers Conference in Anaheim, Calif., were uncomfortable with how and when they should begin the development process.

Consequently, developers may drag their feet on building applications, resulting in fewer programs that exploit Chicago's 32-bit multitasking and multithreading capabilities when the operating system ships sometime in the second half of next year, attendees said.

"I think you've got a floor full of people out there who [were not sure whether they will have apps ready [when Chicago ships]," said one industry observer who attended the conference.

"Microsoft is saying, 'Here is the future,' but a lot of the APIs have not been settled yet," said a developer at the conference, which required nondisclosure agreements of attendees. "Alpha 4 [the latest version of Chicago, released last week] is a nice exercise, but it doesn't tell me squat about what should be doing with the next version of my application."

Selling 50 million copies of Chicago by 1995 will be quite a feat. Microsoft has sold 45 million copies of Windows since its 1985 inception, according to International Data Corp. in Framingham, Mass.

Seeking NT features

At least one corporate developer confronted Microsoft officials about the need to provide a feature similar to Windows NT's subsystem, over profiles to accommodate multiple users on a single machine. The individual profiles allow PC managers to customize a broad range of system settings and which applications will start as the operating system loads.

Chicago, page 10

Novell closes up Unix manager

By Elisabeth Horwitt

Novell, Inc. is attempting to foist a proprietary management system onto Unix System V Release 4 and UnixWare, reneging on promises to keep these systems truly open, said users, analysts and vendors last week.

To push Unix customers and OEMs to support its NetWare Management System, Novell quietly withdrew support this fall for its Tributed Manager.

"Once again, Novell is not paying attention to trends in industry."
— Brian Anderson, CIO, Transocean Ltd.

Distributed Manager is a Unix systems management platform that Novell's recently acquired Unix Systems Group had been in the process of developing with several partners, including Unisys Corp. and Siemens/Nixdorf Informationssysteme AG.

Novell has been talking about providing UnixWare management through NetWare Distributed Management Services the upcoming upgrade to NMS since NOMS was announced this fall. What irks vendors and users is Novell's apparent reversal on support for efforts by Unix industry members including its own subsidiary, to come up with a common management platform specifically tailored to the Unix environment.

Novell, page 10

BENCHMARKING on empty

IS YOUR BENCHMARKING EFFORT REALLY JUST INDUSTRIAL TOURISM? If your IS organization is repeating the mistakes that Texas Instruments, Pfizer and others have made, you aren't on the highway to a high performance organization — you're just puttering down a dead end street.

SEE MANAGEMENT, PAGE 73


Pfizer's Claude Christiano

Technology's helping hand

Food banks automate to feed the hungry

By Johanna Ambrosio

As America's hungry queue up at soup kitchens and shelters this holiday season, technology will play a substantial role in helping to feed them.

"I can't imagine running a holiday without a computer," said Debbie O'Connell, assistant coordinator of the Hunger Hotline at Project Bread, a food bank in Boston.

With the help of one computer with a database, the hot line will help match 540,000 individuals with shelters and soup kitchens in their neighborhoods between Thanksgiving and Christmas this year. Computers "save so much work and they free up time to do more important things like take more

Food banks, page 12


▲ Gracie Keeza serves guests at Rosie's Place, a women's shelter in Boston

Newspaper
BBXBBJFTBBBBBBB CAR-RT SORT BB CR98
BSAT2PR/10T0091608 FEB1395 0010104849
BB 3360
STATE TRANS LIBRARY
10 PARK PLZ
BOSTON MA 02116-3933

Hispanic BUSINESS

December 1993 Volume 15 Number 12


Senator Robert Dole met with Hispanic CEOs eager to pass along their concerns about small business, taxes, and the economy.

10


Seventeen-year-old Mary Rodas, VP of marketing at Calco Inc., is among the youngest entrepreneurial achievers of 1993.

30


Rene Anselmo, CEO of PanAmSat L.P., gambled his earnings after selling his share of the Univision network and won big.

54

COVER STORY
THE HISPANIC BUSINESS ENTREPRENEUR OF THE YEAR 24
Toni Velez of CTA Inc. has a strategy that will take his company to the stars. ...

ACHIEVERS
ENTREPRENEURIAL HIGHLIGHTS OF 1993 30
A collection of the year's noteworthy business achievements. .....

PICTORIAL
STANOING SHOULDER TO SHOULDER 10
CEOs take their concerns about the economy to key D.C. lawmakers. .....

ANNIVERSARY
A MOOEL OF OEVELOPMENT 18
For 25 years, TELACU has invested in East L.A. Will its success spread? ...

SPECIAL SECTION: 1993 MEDIA MARKETS GUIDE
AD SPENOING TOPS $720 MILLION 40
Print increases its share, but TV and radio also report a strong 1993. .....

PURCHASING POWER KEEPS GROWING 46
Youth and growing numbers back up the market's appeal to advertisers.....

BIG WAVES IN RADIOLAND 48
Exposure reaches a peak as two stations hit number 1. .....

THE TELEVISION WARS, PART II 52
Telemundo settles its financial woes and faces a ratings-strong Univision. ...

THE GAMBLE OF THE DECAOE 54
How Rene Anselmo turned his Univision profits into the next big thing. .....

DEPARTMENTS

Direct Line 4
Second Opinion 5
Business Outlook 6
Business Notes 55

Cover

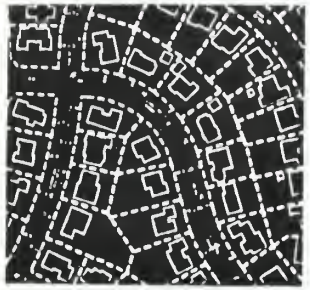
Tom Velez of CTA Incorporated, backed by his crew of 1,300 employees, has been selected the Hispanic Business Entrepreneur of the Year.

Cover photo by Jeff Watts

Cover design by Buffalo Brothers Studios West

GIS WORLD

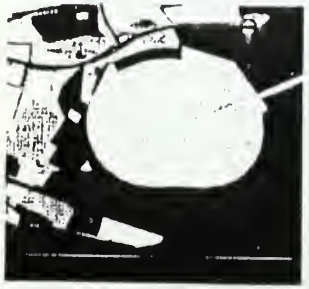
VOL. 6 NO. 12 *The World's Leading Geographic Information Systems Publication* DECEMBER 1993



Page 50 Riverside, Calif., USA, stands to save $2.3 million a year by automating manual drawing, mapping and recordkeeping activities



Page 54 One of the largest gold mines in the United States is merging GPS and GIS technologies to support expansion plans



Page 57 Here are the winners of this year's Best of GIS Images awards

FEATURES

36 **GIS Industry Outlook '94: Ease of Use, Lower Costs Highlight Industry Trends**

48 **Easier Data Exchange Sparks GIS Workplace Evolution** *By Larry Daniel*

50 **City Tailors GIS to Address Information Needs** *By Bart E. Elliott and John L. Sevey*

54 **GPS/GIS Mapping Accurately Assesses Environmental Impact** *By Suzanne Rodbell*

57 **Best of GIS Images Award Winners Named**

58 **Fuzzy Sets Advance Spatial Decision Analysis** *By Sylvia Lam*

GIS NewsLink

9 Questions Surround Landsat 6 Disappearance

9 Systemhouse Acquires GeoVision Technology

9 Arizona Group Increases GIS Education Awareness

9 GIS Literacy Project on Target

10 1995 Sourcebook Compilation Begins

10 SPOT Launches Third Satellite

10 What's in a Name?

10 MGE Software Updated

11 SCADA Forum Begins

11 Agencies Implement Enterprisewide GIS

12 Multimedia Systems Help Tourists

13 Software Functionality Prompts GIS Purchases

13 Library of Congress Begins Map Collection

16 Seminar Series Calendar Released

16 IVHS IDEA Projects Released

16 GPS/GIS Project Tracks Flood Damage

16 Japanese Names IVHS Organization

17 URISA Competition Awards Announced

GIS Federal Connection

18 ALMRS Strategy Revamped

18 GIS Helps FEMA Track Emily

19 NSDI Support Growing

19 USGS News

19 Digital Data Funds Available

19 Partnership Offers Data Flexibility

19 NBS Authorization Pending

20 BLM Supports Clinton's Northwest Initiative

20 Flood Imagery Bibliography Planned

20 Future Applications Guide To Cover '94 Planning

20 IVHS Initiatives Under Way

GIS Conference Connection

20 NCGIA Conference Notes Spatial Data Shortcomings

20 Esri Users Gather in San Francisco

21 GIS in Business '94 • Emtps Planned

21 Applied Geography Conference Held in Toronto

21 UNIX EXPO Sets Attendance, Exhibitor Records

21 ERDAS Users Meet

21 GIS in the Rockies Provides "Real World Solutions"

21 UDMS '94 Offers Latest GIS Research

22 Biological Users Working Group Schedules Meeting

22 InfoCAD Conference '94 Set

22 EDMS '94 User Forum Sets Record Attendance

22 Transportation and National Prosperity Conference Held

GIS WORLD

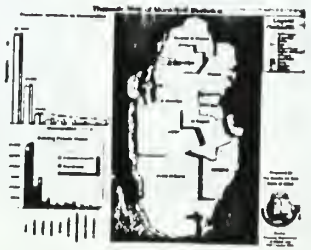
VOL. 7 NO. 1 *The World's Leading Geographic Information Systems Publication* JANUARY 1994



Page 30 Using GIS, Lee County, Fla., created a countywide parcel-level digital base map with full topological intelligence



Page 40 GIS was a valuable tool for studying Sitka black-tailed deer habitat selection in southeastern Alaska



Page 44 The State of Qatar is spreading GIS throughout its government ministries

FEATURES

30 **Coping with Rapid Development: County "Reinvents" Government with GIS Assistance** *By Ginger M. Juhl*

36 **Stereo Maps Enhance Digital Spatial Data Visualization** *By Gregory A. Plumb and Tung-Kai Shyy*

40 **GIS-Based Program Aids Wildlife Habitat and Timber Management** *By Kang-tsung Chang, David L. Verbyla, Jeffrey J. Yeo and Zhao-xing Li*

44 **GIS Program Links Government Agencies** *By Laura Lang*

48 **Portable Systems Increase Productivity, Profits and Pleasure** *By Richard D. Schuhman*

NewsLink

9 CIA/DOD to Sell Satellite Imagery?

9 High Resolution Satellite Imagery Alliance Planned

9 Martin Marietta Finds Few Answers

9 Strategic Mapping Acquires Donnelley Marketing Information Services

9 Landsat 7 Successor System to Be Studied

10 GIS Tutor2 Released

10 Automation Leader Dies

10 Autometric to Buy Kork Systems

10 Satellite Imagery Reduces Crop Loss

10 ICAIR Wins Satellite Imagery Grant

10 GEOVISION or GeoVision?

11 Exhibit Features Satellite Technology

11 Denver Library Opens GIS Center

11 GLIS Pushing for ACSM Membership

11 Utility Awards Announced

11 Consulting Tops GIS Services List

Conference Connection

13 Bancroft Highlights GIS/LIS '93

13 Geomatics IV Held in Montreal

13 Symposium to Discuss Standards, Applications

13 Amsterdam Hosts GIB '94•Europe This Month

13 DA/DSM '94 Set for Florida

14 GIS '94 to Discuss Natural Resource Management

14 NAV '93 Charts Navigation Systems

14 Autodesk Conference Offers Diverse Program

14 RTS '94 Scheduled

Federal Connection

14 U.S. Forest Service Restructuring

14 Babbitt is New FGDC Chairman

14 Committee Suggests Commercial Satellite Services

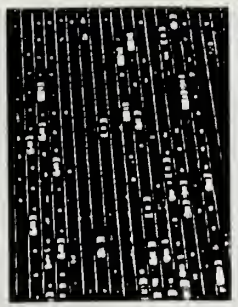
15 Seven Firms Selected for DOQ Awards

15 Global Environmental Policy Addressed

15 New Imaging Technology Under Way

15 Geographic Names Data Available

CIVIL ENGINEERING
NOVEMBER 1993 VOLUME 63 NUMBER 11



On the Cover
Autos on this New Jersey car lot are ready to hit some of the 8 million lane mi of pavement in the U.S. To set construction budgets and schedules for this sprawling network of roadways, transportation agencies are increasingly relying on pavement-management systems (see page 40). Photo by Michael Goodman.

FOCUS ON STRUCTURES/INSTRUMENTATION

So Much Pavement, So Little Time With 8 million lane mi of pavement in the U.S., which roads should be fixed first, last and in between? *By Paul Tarricone* 40

Arches for a Parkway After 60 years, construction of the Southeast's Natchez Trace Parkway will finish with a flourish, as workers erect the first precast segmental bridge arches in the U.S. *By John A. Corven and John W. Jordan Jr.* 44

Can Engineers Cut Curtain-Wall Failures? Engineers' abdication of responsibility for curtain-wall design may be the cause of many failures. *By David H. Nicastro* 48

A Dome to Remember The first use of cable stays to support a stadium roof helped the designers of San Antonio's Alamodome deliver a large, flexible arena that is attractive to look at and a bargain to build. *By James Denning* 50

What Sank the Lacey Murrow? Consultants for the contractor and the state give their interpretations of the causes behind the November 1990 failure of Seattle's 50-year-old Lacey V. Murrow Floating Bridge during a major renovation.
The State's Case *By Donald O. Dusenberry* 54
The Contractor's Case *By Charles R. Firth* 58

The Hazard in Using Probabilistic Seismic Hazard Analysis Seismic-probability theory is widely used and highly useful, but is it wrong? *By Ellis L. Krinitzsky* 60

Tying Up the Artery An integrated design system links project and design data for Boston's Central Artery and its Third Harbor Tunnel. *By Susan McDonald* 62

Airport Towers: A New Generation New control towers in Los Angeles and Chicago typify the Federal Aviation Administration's 20-year modernization plan. *By Lee Harper and Joseph M. Madda* 65

Infratechnologies: Tools for Innovation New technologies that support decisions about a facility over its entire life cycle are critical to future innovation and quality in U.S. construction. *By Richard N. Wright* 68

Reclaiming Clear-Cut Land The storm-water-management plan for the Savannah (Ga.) International Airport expansion will create and enhance almost 300 acres of wetlands. *By Elliot Silverston, Mark Easley and James A. Harned* 70

ENGINEERING NEWS

Sydney, Australia's circular parking garage ... phones keep ringing during a no-dig project ... an expert system for hazardous-waste sites ... a record-breaking soil-mixed wall ... Clean Air Act challenges ... automated building construction ... sizing up the U.S., Europe and Japan ... the myth of the Aswan Dam? ... a recycled playground 12

DEPARTMENTS

Forum 6
News Briefs 8
SI Conversion 25
Court Decisions 30
Readers Write 32
Legal Trends 38
ASCE News 72
ASCE Conferences 76
Calendar 77
Members 81
Publications 85
Engineering Applications 87
New Products 89
Manufacturers Literature 92
Engineering Marketplace 103
Computer Systems Marketplace 114
Professional Services 116
Index to Advertisers 119
Washington 120
Reader Service Coupon 121

WorkingWoman
JANUARY 1994

FEATURES



SPECIAL MONEY ISSUE

7 THE WORKING WOMAN SURVEY Are You Making the Most of Your Money?

25 THE 15TH ANNUAL SALARY SURVEY Does Your Pay Measure Up?
25 Plus The Best-Paid Women in Corporate America • *By Katherine and Richard Greene*
31 Executive Compensation: Where Women Stand • *By Joanhee Kim*
33 The Right Way to Ask for a Raise • *By Stephen M. Pollan and Mark Levine*

34 GIVE YOURSELF A FINANCIAL CHECKUP Start the new year with a simple fiscal-fitness routine to help you make the most of what you earn • *By Charles E. Cohen*

35 WHEN WOMEN MAKE MORE THAN MEN Nobody ever asks women how *they* feel when they outearn their husbands. The surprising answer: pretty damned good *By Ronni Sandroff*

44 BORN TO RUN Kathleen Brown, daughter of one California governor and sister of another, is announcing her own candidacy for governor. If she wins, she'll be on the short list for the White House *By Margaret Carlson*





PHOTOGRAPHS (FROM TOP) BY ANTHONY ROBIN, STEPHEN DANIELIAN AND DAVID BARRY

HEALTH

68 CLINTON'S HEALTH PLAN: WHAT'S IN IT FOR WOMEN? There are some advances and some retreats in the bills before Congress—and many battles ahead • *By Susan Dentzer*

LIVING

75 DESIGN Working Collections: Four inspired professionals who bring home more than a paycheck

82 BUYER'S GUIDE Weight Watchers: When it comes to bathroom scales, it's consistency that counts



DEPARTMENTS

2 EDITOR'S LETTER

13 BIZ BUZZ Does a Women's Fund Pay Off for Women?; Olympic Opportunities; What's Hot, What's Not; Sandra Kurtzig: Going Off-Line; What's What With Who's Who's; Washington Watch; Trendicators; and more

19 MANAGING The New Corporate Watchdogs: Can ethics officers keep companies on the straight and narrow? *By Nancy K. Austin*
22 Plus How I Did It: Jane Hutterly of S.C. Johnson & Son on getting a company to think green

51 CAREER STRATEGIES Getting Personal: When to talk about your private problems at the office—and what to say when you do *By Dr. Adele Scheele*

57 TECH TALK Software for Running a Business: Packages to help you set up an accounting system, create a business plan and market ideas successfully *By Ellen DePasquale*

60 SMALL BUSINESS Baby Boom, Part Two: How one clever viewer cashed in on a movie video by building a baby-friendly healthy-foods business *By Nancy Stesin*

90 OUT-BOX From office duties to family life, why women's work is never done • *By Gail Collins*

November 1993

Railway Age









35 Pull-out section:
1994 Regional/Commuter Rail Planner's Guide
New directions for rolling stock
Regional passenger rail continues to grow

75 Training in tune with the future
Railroads and community colleges may expand a program pioneered by BN

79 Mid-range power: How big a market?
Units returning to the market will influence remanufacturing/rebuilding

82 The *Railway Age* Golden Freight Car Awards
Norfolk Southern, Sand Springs, Union Pacific, and RailTex share the spotlight

84 Morristown & Erie: Small railroad, big presence
New Jersey's "phantom" short line has made a remarkable rebound.

15 Rail Update
Short Line of the Year; No partner now sought for EMD; CSXT abandonment; REMSA; The Supply Side.

30 Transit Update
Amtrak, high speed rail, and '94 funding; Breda's VLC; NJ Transit LRVs; Metrorail extension; In Transit.

COMMENTARY

1 Publisher's Letter
4 Inside
9 Watching Washington
10 Lines on Labor
12 Marketing Advocate
14 Financially Speaking

DEPARTMENTS

6 Industry Outlook
8 The Railway Market
88 People
90 100 Years Ago
91 150 Years Ago
92 Meetings
94 Products
98 Literature
100 Letters
101 Advertisers Index/Ad Sales
103 Professional Directory
104 Classified
108 World Update

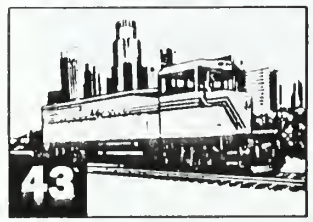
Cover photo courtesy Burlington Northern Technical Training Center

December 1993

Railway Age









27 A good '93—and more in '94
The rail industry performed well this year, and new highs may be in store for '94

32 It's time for up-sizing
Will down-sizers be as good at growing business as at cutting facilities and people?

36 How do you price quality?
Do CEOs preach too much about quality? Do buyers gnaw away too much at price?

Special pull-out section: **1994 Railroad Financial Deskbook**

41 Chicago Belt: Portrait of a winner
Railway Age's Short Line of the Year has reversed its fortunes in a very short time

43 Union Pacific will test MK's LNG switcher
New LNG-fueled switchers address air quality concerns of interest to all railroads

46 On the record with FTA's Gordon J. Linton
Full funding for ISTEA is high on the Clinton Administration's priority list

50 CN's strategy for survival
CEO Paul Tellier talks about rescuing Canada's railroads from a precarious position

20 Rail Update
SP, IBM, and MIS; a new NRLC chair, MK in South America; The Supply Side.

24 Transit Update
ABB and SEPTA, Bombardier and Sky Train; maglev in New York, In Transit

COMMENTARY

4 Inside
9 Watching Washington
12 Lines on Labor
16 Financially Speaking
18 Perspective

DEPARTMENTS

6 Industry Outlook
8 The Railway Market
53 VTS News
60 People
62 100 Years Ago
62 150 Years Ago
65 Products/Literature
69 Letters
70 Meetings
72 Advertising Sales
73 Advertisers Index
74 Professional Directory
75 Classified
80 World Update

Cover photo: Donald Sims

CONTENTS

NOVEMBER 1993
VOL. 30, NO. 11

TRAINING
THE HUMAN SIDE OF BUSINESS®

FEATURES

TRAINERS' SALARIES, 1993 23
By Paul Froiland
The average salary in the training field rose 4 percent this year. But here's a twist: Women's raises outpaced men's four to one.

SHIP OF CHARLATANS 32
By Joel Hochberger
A training manager's lament.

AN INTERVIEW WITH JOHN CLEESE 37
The funniest man in the training business talks seriously about creativity, humor, and dealing with the chronically indignant.

TRAINING AND THE FEDS 43
What role should the federal government play in employer-sponsored training? Here's what training professionals think.

STALKING THE ELUSIVE TECHNOLOGY PAYOFF 47
By David Stamps
A decade after personal computers began popping up on desktops, the white-collar world is still waiting for productivity to soar. The answer? Training.

RETHINKING THE RUSH TO TEAM UP 55
By Ron Zemke
Flash! Work teams don't work miracles! But before we get all weepy and disillusioned, let's brush up on what we ought to expect.



Page 32



Page 37



Page 55

DEPARTMENTS

EDITORS' NOTEBOOK 7
Place Your Bets, Please

TRAINING TODAY 10
Labor Department goes online, the trouble with flexible work and more.

LETTERS 17

CALENDAR 21

BOOKS & FILMS 75

FACTS & FIGURES 79
CBT: Are the Users Friendly?

NEW PRODUCTS & SERVICES 81

FREE INFORMATION 87

SEMINARS & WORKSHOPS 89

CLASSIFIEDS 91

VIEWPOINT 94
Paradigm Lost
By Jack Asgar

Cover illustration by Greg Ragland

PRINTED WITH SOY INK

CONTENTS

DECEMBER 1993
VOL. 30, NO. 12

TRAINING
THE HUMAN SIDE OF BUSINESS®

FEATURES

THE FLEXIBLE WORK FORCE: USING CONTINGENT WORKERS WISELY AND HUMANELY 23
By Beverly Geber
Companies need flexibility and they need to cut costs. But they don't need to exploit contingent workers.

WHAT CURES JOB STRESS? 32
By Paul Froiland
a) Wellness programs
b) Brown-bag stress seminars
c) Less work and more control over the job.

HOW TO ESCAPE CORPORATE AMERICA'S BASEMENT 39
By John V. Noonan
There's just one way to earn respect in business: Contribute to the bottom line. You can demonstrate the dollar value of training without spending all of your time on elaborate evaluations.

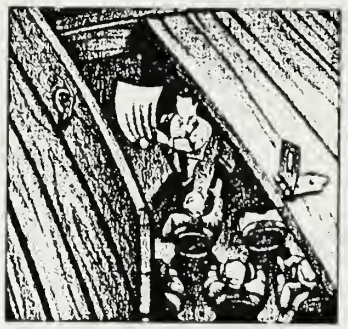
BRIDGING THE GAP BETWEEN SCHOOL AND WORK 44
By Bob Filipczak
Career prospects for high-school graduates who don't go to college are dim. But in Boston, a hospital apprenticeship program offers these students a shot at a better future.

THE AGE OF THE SPECIALIZED GENERALIST 48
By Margaret Kaeter
The workers of tomorrow will need to know more than ever about more subjects than ever. Paradoxically, they'll also have to be specialists.

THE 1993 TRAINING INDEX 63
For future reference...an index of articles published this year in TRAINING.



Page 32



Page 39



Page 44

DEPARTMENTS

EDITORS' NOTEBOOK 10
I Am a Learning Organization

TRAINING TODAY 12
What's in a name, Japan Inc. revisited, tips for writing a readable manual and more.

CALENDAR 17

LETTERS 19

TRAINING'S BIANNUAL REVIEW OF PRODUCTS AND SERVICES 55

TECH TRENDS 67
Combining 'Hard' Ware With Soft Skills

FREE INFORMATION 68

BOOKS & FILMS 69

SEMINARS & WORKSHOPS 71

CLASSIFIEDS 74

VIEWPOINT 76
A Vision for All Seasons
By Dick Schaaf

Cover illustration by Ron Finger

PRINTED WITH SOY INK

November/December 1993
Vol. 32, No. 10

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

Showcase Listings 6

A catalog of parking industry suppliers listed under product categories. Under each category, the equipment, technology or service offered is described and, in many instances, pictured. An index appears on page 5.

Topic Listings 84

Parking industry suppliers listed under product categories. Each listing gives the company's name, address, telephone and fax numbers. An index of Topic Listings appears on page 83.

Parking Consultants Council 102

Members of NPA's Parking Consultant Council and the areas of expertise and specialization each provides. An index appears on page 101.

Parking Operators 114

Private commercial parking owners and operators, including national, regional and local, and the parking managaement, leasing and valet services each provides. An index appears on page 113.

Master Index 121

Advertisers' Index 128

TUNNELS & TUNNELLING

NOVEMBER 1993 VOL 25 NO 11

CONTENTS

Comment 5

World News 7, 8, 9, 11, 13, 14

Innovative structures on the Moscow Metro 17
RUSSIA *Within the next year, seven new stations will have been opened on Moscow's underground railway and many more are under construction. A report on the effective methods being tried in Russia for the first time comes from Dipl-Ing Dr Lrv D Virin and Dipl-Ing Alexander S Krvlov of Metrogiprotrans Institute in Moscow.*

Tunnelled stage of the Brighton Bypass 20
UNITED KINGDOM *Assistant Editor John Hellings describes the method used to drive a bypass under a sensitive area of England and asks whether it really is the NATM.*

Wireless underground mine communications 22
COMMUNICATIONS *The need for modern two-way underground radio communication systems has led to the development of flexible hybrid setups. This account comes from Russell A Carter, Editor for the western US. Engineering & Mining Journal.*

Time and settlement in EPB shield tunnelling 27
SETTLEMENT *A technical report on the time-settlement relationship data gathered on a section of the Taipei MRT while under construction is presented by Yung-Show Fang, Associate Professor, Shvh-Jve Lin and Jaw-Shuenn Lin, Graduate Students, Department of Civil Engineering, National Chiao Tung University, Hsinchu, Taiwan*

Letters to the Editor 30

IChemE Green Book Second Edition 33
CONTRACTS *Danny Atkinson, Associate Director of the London office of construction consultant James R Knowles, outlines this form of contract, which is being used increasingly in the civil engineering field, and compares it with others.*

Middle-East tunnelling from Abraham to today 36
BRITISH TUNNELLING SOCIETY *Michael Bar-On, formerly of the Standards Institute in Israel, explores the evidence of tunnelling in this part of the world over the last 3000 years and describes the reasons for it and the techniques employed.*

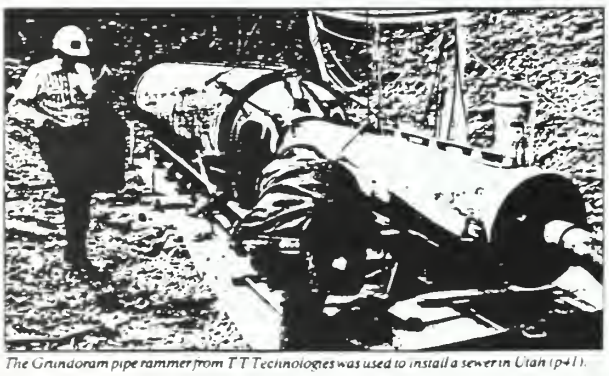
Research and practice in a growing industry 39
PIPE JACKING *Technical journalist Nick Barrett surveys the status of this tunnelling technique worldwide and the equipment used.*

Business & Finance 43

Products & Services 45

Contracts & Orders 46

Dates & Events 50



The Grundoram pipe rammer from T T Technologies was used to install a sewer in Utah (p41).

Journal of

Urban Planning and Development

Volume 119 Number 4 December 1993

TECHNICAL PAPERS

Designing Private Funding Programs for Public Highways.
Erik Sabina and Sue McNeil 155

Decision-Support Tools for Transferring AM/FM/GIS to Small Communities.
Steven W. McCrary, Colin O. Benjamin, and Peter J. Schmidt 173

TECHNICAL NOTE

Population Estimation of City from Aerial Photographs: Riyadh Case.
Abdalla ElSadig Ali 190

REVIEWERS OF THE *JOURNAL OF URBAN PLANNING AND DEVELOPMENT* 198

END OF YEAR INDEX 199

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ Fax_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION BUILDING LIBRARY
10 PARK PLAZA
BOSTON, MA 02116

BOSTON
JAN 3'94
MA
U.S POSTAGE
075

Leonard Adams
Government Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS. STL1.3:1994/no.1

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISTIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

GOVERNMENT DOCUMENTS
COLLECTION

MAY 09 1994

University of Massachusetts
Depository Copy

LIBRARY
APR 14 94
UNIV. OF MASS.

January • February • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

AERONAUTICS, COMMERCIAL.

HE
131
.T687r
no.1378

Public-sector aviation issues : graduate research award papers, 1991-1992. -- Washington, D.C. : National Academy Press, 1993.
v, 43 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1378)
ISBN 0-309-05423-0

1. Aeronautics, Commercial. 2. Aeronautics--Safety measures.

15 FEB 94 28021449 TLBAsc 93-10587

AIDS TO NAVIGATION.

VK
381
.W34
E82
1992

Walker, R.
Evaluation of 5-year dayboard materials / R. Walker and J.V. Plourde. -- Washington, DC : U.S. Coast Guard, Office of Engineering, Logistics, and Development ; Springfield, Va. : Available through the National Technical Information Service, [1992]
1 v. (various pagings) : ill. ; 28 cm.
STRN: CG-D-17-92

1. Aids to navigation. 2. Signs and signboards.

03 MAR 94 27373838 TLBAsc

AIRPORTS--PLANNING.

TL
725.3
.P5
H67
1993

Horonjeff, Robert.
Planning and design of airports / Robert Horonjeff and Francis X. McKelvey. -- 4th ed. -- New York : McGraw-Hill, c1993.
xiii, 829 p. : ill. ; 24 cm.
ISBN 0-07-045345-4

1. Airports--Planning. 2. Airports--Design and construction.

15 FEB 94 28282387 TLBAsc 93-23138

ASPHALT CEMENT.

HE
131
.T687r
no.1381

Asphalt cement and asphalt/polymer blends / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 64 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1381)
ISBN 0-309-05462-1

1. Asphalt cement. 2. Asphalt--Additives. 3. Polymers. 4. Pavements, Asphalt--Testing.

15 FEB 94 28585281 TLBAsc 93-30010

ASPHALT--TESTING.

HE
131
.T687r
no.1386

Conference on SHRP on Asphalt Research (1993 : Washington, D.C.)
Conference on SHRP Asphalt Research : papers presented at the conference, January 10, 1993, Washington, D.C. -- Washington, D.C. : National Academy Press, 1993.
v, 48 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1386)
ISBN 0-309-05455-8

1. Asphalt--Testing. 2. Asphalt emulsion mixtures--Testing.

15 FEB 94 28336761 TLBAsc 93-21640

ATTITUDE (PSYCHOLOGY)

RC
455.4
.A86
R62
1991

Robinson, Bryan E.
Heal your self-esteem : recovery from addictive thinking / Bryan E. Robinson. -- Dearfield Beach, Fla. : Health Communications, c1991.
xv, 187 p. : ill. ; 22 cm.
ISBN 1-55874-118-4

1. Attitude (Psychology) 2. Thought and thinking. 3. Psychology, Pathological.

22 FEB 94 22345681 TLBAsc 90-5289

AUTOMOBILES--CRASHWORTHINESS--TESTING.

TL
285
.L66
D66
1993

Looker, K. W.
Door latch integrity moving deformable barrier into a 1986 Volkswagen Golf at 315 impact angle / [K.W. Looker]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; Springfield, Va. : Available through the National Technical Information Service, [1993]
145 p. in various pagings : ill. ; 28 cm.
STRN: DOT HS 807 978
1. Automobiles--Crashworthiness--Testing. 2. Automobiles--Doors--Testing. 3. Golf automobile--Crashworthiness--Testing.

01 MAR 94 28678232 TLBAsc

AUTOMOBILES--SEAT BELTS--EVALUATION.

TL
242
.E33
1993

Effectiveness of occupant protection systems and their use : report to the Congress / U.S. Department of Transportation, National Highway Traffic Safety Administration. -- [Washington, D.C.] : National Highway Traffic Safety Administration, [1993]
51 p. ; 28 cm.

1. Automobiles--Seat belts--Evaluation. 2. Automobiles--Safety appliances--Evaluation. 3. Air bag restraint systems--Evaluation.

01 MAR 94 28033868 TLBAsc

BRIDGES--DESIGN AND CONSTRUCTION.

TG
315
.C47
1993

Certification program for bridge temporary works. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
iv, 14 p. ; 28 cm.
STRN: FHWA-ED-93-033

1. Bridges--Design and construction. 2. Bridges--Maintenance and repair. 3. Scaffolding--Specifications. 4. Temporary structures (Building)--Specifications.

03 MAR 94 28780722 TLBAsc

BRIDGES--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1393

Structures / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
vii, 188 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1393)
ISBN 0-309-05466-4

1. Bridges--Design and construction. 2. Bridges--Testing. 3. Bridges--Live loads--Testing.

15 FEB 94 29375279 TLBAsc

BRIDGES--DESIGN AND CONSTRUCTION--HANDBOOKS, MANUALS, ETC.

TG
315
.D86
C66
1993

Duntemann, John F.
Construction handbook for bridge temporary works / [John F. Duntemann, Flora Calabrese, and Safdar Gill]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 122 p. : ill. ; 28 cm.
STRN: FHWA-ED-93-034
1. Bridges--Design and construction--Handbooks, manuals, etc. 2. Bridges--Maintenance and repair--Handbooks, manuals, etc. 3. Scaffolding--Specifications. 4. Temporary structures (Building)--Specifications.

03 MAR 94 28780706 TLBAsc

BRIDGES, WOODEN--FLOORS--DESIGN AND CONSTRUCTION.

TG
365
.D38
D47
1993

Davalos, J. F.
Design, construction, and quality control guidelines for stress laminated timber bridge decks / [J.F. Davalos and S.H. Petro]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 50 p. : ill. ; 28 cm.
STRN: FHWA-ED-91-120

1. Bridges, Wooden--Floors--Design and construction. 2. Bridges, Wooden--Design and construction. 3. Bridges, Wooden--Maintenance and repair.

03 MAR 94 28893166 TLBAsc

BUS LINES--SAFETY REGULATIONS--CALIFORNIA--HANDBOOKS, MANUALS, ETC.

T
55.3
.H3
C34
1993

California hazardous materials regulatory compliance : four model plans with guidance on preparation. -- Sacramento, CA : California Dept. of Transportation, Division of Mass Transportation, [1993]
1 v. (various pagings) : ill. ; 28 cm.
STRN: FTA/DMT-CA-26-PB94-100070
1. Bus lines--Safety regulations--California--Handbooks, manuals, etc. 2. Paratransit services--Safety regulations--California--Handbooks, manuals, etc. 3. Hazardous substances--Transportation--Law and legislation--California--Handbooks, manuals, etc.

03 MAR 94 28774819 TLBAsc

BUS LINES--SAFETY REGULATIONS--CALIFORNIA--HANDBOOKS, MANUALS, ETC.

T
55.3
.H3
C65
1993

A Comprehensive assessment of hazardous materials regulatory compliance requirements facing public transportation operations in California. -- Sacramento, CA : California Dept. of Transportation, Division of Mass Transportation, [1993]
1 v. (various pagings) : ill. ; 28 cm.
STRN: FTA/DMT-CA-26-PB93-140739

03 MAR 94 28774826 TLBAsc SEE NEXT CRD

CHILD RESTRAINT SYSTEMS IN AUTOMOBILES--TESTING.

TL
242
.H68
E92
1993

Howe, J. Gavin.
Evaluation of belt positioning booster seats and lap/shoulder belt test procedures / [J. Gavin Howe and Lisa K. Sullivan]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; Springfield, VA : Available through the National Technical Information Service, [1993]
v, 192 p. : ill. ; 28 cm.
STRN: DOT HS 808 005
1. Child restraint systems in automobiles--Testing. 2. Automobiles--Crashworthiness--Testing. 3. Automobiles--Safety appliances--Testing. 4. Crash injuries.

01 MAR 94 28022278 TLBAsc

CULVERTS--CALIFORNIA--MAINTENANCE AND REPAIR.

TE
213
.A78
C84
1993

Aryani, Cyrus.
Culvert restoration techniques / Cyrus Aryani and Joan Al-Kazily. -- [Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1993]
vi, 118, [19] p. : ill., forms ; 28 cm.
STRN: FHWA/CA/TL-93/14

1. Culverts--California--Maintenance and repair.

03 MAR 94 28485843 TLBAsc

CULVERTS--COMPUTER PROGRAMS.

TE
215
.B93
1993
Hydra V3.1 [computer file]. -- Columbus : Ohio Dept. of Transportation, Hydraulics Section, [1993]
7 computer disks : col. ; 5 1/4 in. + user manual (1 v. (various pagings) : ill. ; 28 cm.).

1. Road drainage--Computer programs. 2. Hydraulics--Computer programs. 3. Culverts--Computer programs. 4. Storm sewers--Computer programs.

03 MAR 94 28716745 TLBAsc

CULVERTS--OHIO.

TE
215
.S37
1993
Serikelle, Simsek.
Development of micro-based interactive computer programs--hydraulics / submitted by S. Serikelle. -- Akron, Ohio : Dept. of Civil Engineering, University of Akron ; Springfield, Va. : Available to the public through National Technical Information Service, [1993]
88 leaves : ill. ; 28 cm.

1. Road drainage--Computer programs. 2. Hydraulics--Computer programs. 3. Culverts--Ohio. 4. Storm sewers--Ohio.

03 MAR 94 28648595 TLBAsc

CYCLING PATHS--UNITED STATES.

HE
336
.C92
W54
1986
Wilkinson, W. C.
Selecting and designating bicycle routes : a handbook / Wm. C. Wilkinson III and Catherine G. Moren. -- Washington, D.C. (1818 R Street NW, Washington, D.C. 20009) : Bicycle Federation of America, [1986]
64 p. : ill. ; 28 cm.

1. Cycling paths--United States. 2. Traffic signs and signals--United States.

09 MAR 94 18943281 TLBAsc

CYCLING--SAFETY MEASURES.

HE
131
.T687r
no.1405
Pedestrian, bicycle, and older driver research : operations and safety / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 86 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1405)
ISBN 0-309-05554-7

1. Cycling--Safety measures. 2. Pedestrian accidents. 3. Pedestrians--Safety measures. 4. Aged automobile drivers.

15 FEB 94 29780007 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

TE
228
.C57
1993
City of Anaheim integrated traffic management system demonstration project / prepared by JHK and Associates ; funded by City of Anaheim and U.S. Department of Transportation, Federal Highway Administration. -- Washington, D.C. : U.S. Dept. of Transportation : Distributed by Technology Sharing Program, U.S. Dept. of Transportation, [1993]
80 p. in various pagings : ill., maps ; 28 cm. -- (A technology sharing reprint)
1. Electronic traffic controls. 2. Highway communications--California--Anaheim. 3. Traffic signs and signals--California--Anaheim.

01 MAR 94 28205527 TLBAsc

EPOXY RESINS--EVALUATION.

TA
683.42
.M57
E92
1993
Mir, Abid A.
Evaluation of new bonding materials for anchoring dowels in existing concrete / prepared by Abid A. Mir and John P. Dusel. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; Springfield, VA : Available through the National Technical Information Service, 1993]
1 v. in 181 pages : ill. ; 28 cm.
STRN: FHWA/CA/TL-93/11
1. Epoxy resins--Evaluation. 2. Grouting--Evaluation. 3. Reinforcing bars. 4. Dowels. 5. Concrete construction.

03 MAR 94 29604445 TLBAsc

EXPANSION JOINTS.

TG
325.6
.D87
E33
1993
Dusel, John P.
Effects of combined loading and edge distance on the performance of mechanical expansion anchors : report / prepared by John P. Dusel, Jr. and Nelle G. Merino. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1993]
144 p. in various pagings : ill. ; 28 cm.
STRN: FHWA/CA/TL-93/10
1. Expansion joints. 2. Bridges--Floors. 3. Guy anchors. 4. Concrete construction.

01 MAR 94 29431667 TLBAsc

FLOOD FORECASTING--KANSAS.

GB
1399.2
.M43
E92
1992
McEnroe, Bruce M.
Evaluation of hydrologic analysis procedures used by KDOT. Volume I / by Bruce M. McEnroe. -- [Lawrence, Kan.] : University of Kansas, Dept. of Civil Engineering, [1992]
125 p. in various pagings : map ; 28 cm.
STRN: K-TRAN: KU-92-1

1. Flood forecasting--Kansas. 2. Rainfall intensity duration frequencies--Kansas--Tables. 3. Highway departments--Kansas.

03 MAR 94 27243236 TLBAsc

HIGH SPEED GROUND TRANSPORTATION--
ENVIRONMENTAL ASPECTS.

TF
1600
.S343
1993

Goldberg, Robert B.
Safety of high speed guidmd ground transportation systems : an overview of biological effects and mechanisms relevant to EMF exposures from mass transit and electric rail systems / [R.B. Goldberg, W.A. Creasey, K.R. Foster]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
176 p. in various pagings : ill. ; 28 cm.
STRN: DOT/FRA/ORD-93/32

09 MAR 94 29431693 TLBAsc SEE NEXT CRD

HIGH SPEED GROUND TRANSPORTATION--
ENVIRONMENTAL ASPECTS.

TF
1600
.S346
1993

Groh, Kenneth Robert.
Safety of high speed guided ground transportation systems : the biological effects of maglev magnetic field exposures / [Kenneth R. Groh]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
56 p. in various pagings : ill. ; 28 cm.
STRN: DOT/FRA/ORD-93/30
1. Magnetic levitation vehicles--Environmental aspects. 2. Magnetic fields--Envir omental aspects. 3. High speed gr ound transportation--Environmental aspects.

09 MAR 94 29421353 TLBAsc

HIGH SPEED GROUND TRANSPORTATION--
GOVERNMENT POLICY--UNITED STATES.

TF
1600
.U54
E531
1993

United States. Congress. Senate. Committee on Commerce, Science, and Transportation. Subcommittee on Surface Transportation.
High-speed ground transportation oversight : hearing before the Subcommittee on Surface Transportation of the Committee on Commerce, Science, and Transportation, United States Senate, One Hundred Second Congress, second session, August 6, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O.; Supt. of Docs.; Congressional Sales Office, 1993.
iv, 122 p. : ill. ; 23 cm. -- (S. hrg. ; 102-1020)
ISBN 0-16-0 40092-8

01 MAR 94 28012576 TLBAsc SEE NEXT CRD

HIGH SPEED GROUND TRANSPORTATION--
UNITED STATES.

TF
1600
.B341
1992

Battelle Memorial Institute. Columbus Laboratories.
Safety of high speed guided ground transportation systems : shared right-of-way safety issues / Battelle Memorial Institute, Columbus Division. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : National Technical Information Service [distributor], [1992]
202 p. in various pagings : ill. ; 28 cm.
STRN: DOT/FRA/ORD-92/13

09 MAR 94 27126719 TLBAsc SEE NEXT CRD

HIGH SPEED TRAINS--ENVIRONMENTAL
ASPECTS.

TF
1600
.S342
1993

Safety of high speed guided ground transportation systems : broadband magnetic fields, their possible role in EMF-associated bioeffects / [Don Goellner ... et al.]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
220 p. in various pagings : ill. ; 28 cm.
STRN: DOT/FRA/ORD-93/29

09 MAR 94 29485369 TLBAsc SEE NEXT CRD

HIGH SPEED TRAINS--ENVIRONMENTAL
ASPECTS.

TF
1600
.S344
1993

Safety of high speed guided ground transportation systems : EMF exposure environments : summary report / [Don Goellner ... et al.].-- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
1 v. (various pagings) : ill. ; 28 cm.
STRN: DOT/FRA/ORD-93/28
1. Electromagnetic fields. 2. Electric railroads--Safety measures. 3. High speed trains--Safety measures. 4. High speed trains--Environmental aspects. 5. Electromagnetics--Physiological effect.

09 MAR 94 29750217 TLBAsc

HIGH SPEED TRAINS--ENVIRONMENTAL
ASPECTS.

TF
1600
.S345
1993

Creasey, William A.
Safety of high speed guided ground transportation systems : potential health effects of low frequency electromagnetic fields due to maglev and other electric rail systems / [William A. Creasey, Robert B. Goldberg]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
1 v. in various pagings : ill. ; 28 cm.
STRN: DOT/FRA/ORD-93/31

09 MAR 94 29555728 TLBAsc SEE NEXT CRD

HIGHWAY COMMUNICATIONS--TEXAS--DALLAS
METROPOLITAN AREA.

HE
368
.J67
D86
1992

Joseph, Thomas.
Dynamic framework for the analysis of user responses to traffic system disruptions and control actions / by Thomas Joseph, Hani S. Mahmassani and Rong-Chang Jou. -- Austin : Center for Transportation Research, the University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 89 p. : charts ; 28 cm. -- (Research report ; no. 1216-2F)
STRN: FHWA/TX-93+1216-2F
1. Highway communications--Texas--Dallas Metropolitan Area. 2. Traffic flow--Texas--Dallas Metropolitan Area. 3. Commuters- -Texas--Dallas Metropolitan Area--Decision making.

Rev-1 3-1-94 TLBAsc

HIGHWAY COMMUNICATIONS--TEXAS--HOUSTON.

TE
228.3
.T56
E92
1992

Thompson, Beverly A.
Evaluation of a motorist information system using computer display terminals : final report / by Beverly A. Thompson. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
196 p. in various pagings : ill. ; 28 cm. -- (Research report ; 958-1F)
STRN: TX-92/958-1F
1. Highway communications--Texas--Houston. 2. Intelligent Vehicle Highway Systems--Texas--Houston. 3. Information display systems.

03 MAR 94 29661901 TLBAsc

HIGHWAY ENGINEERING--RESEARCH.

HE
131
.T687c
no.417

Research problem statements : design and construction of transportation facilities. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
195 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 417)

1. Highway engineering--Research. 2. Traffic engineering--Research. 3. Railroad engineering--Research.

15 FEB 94 29424774 TLBAsc

LOCAL TRANSIT--PLANNING.

HE
131
.T687r
no.1402

Public transit : current research in planning, marketing, operations, and technology / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 116 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1402)
ISBN 0-309-05473-7

1. Local transit--Planning. 2. Local transit--Marketing. 3. Local transit--Costs.

15 FEB 94 29774839 TLBAsc

LOCAL TRANSIT--UNITED STATES--FINANCE.

HE
4351
.E57
1993

Entrepreneurial services program financing handbook / prepared by Commonwealth Development Associates. -- Washington, DC : Federal Transit Administration, Office of Private Sector Initiatives : Distributed by Technology Sharing Program, U.S. Dept. of Transportation, [1993]
xii, 101 p. ; 28 cm.

1. Local transit--United States--Finance. 2. Local transit--United States--Finance--Handbooks, manuals, etc. 3. Local transit--United States--Management--Handbooks, manuals, etc.

01 MAR 94 29253609 TLBAsc

MOTIVATION (PSYCHOLOGY)

BF
637
.C4
B36
1994

Banks, Kurt, 1947-
The change navigator : preparing a new kind of leader for an uncharted tomorrow / Kurt Banks. -- Experimental ed. -- Menlo Park, Calif. : Crisp Publications, c1994.
151 p. : ill. ; 28 cm. -- (Quick read series)
ISBN 1-56052-211-9 (pbk.)

1. Motivation (Psychology) 2. Change (Psychology) 3. Leadership. 4. Problem solving--Graphic methods. 5. Decision-making--Graphic methods. 6. Creative ability--Problems, exercises, etc.

22 FEB 94 29705640 TLBAsc 93-70920

MOTOR VEHICLES--AUTOMATIC LOCATION SYSTEMS.

TE
228.3
.U63
E92
1993

Ung, Edmund B.
Evaluate vehicle navigation and communication technologies / Edmund B. Ung, Walter A. Winter. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; Springfield, VA : Available through the National Technical Information Service, 1993]
267 p. in various pagings : ill. ; 28 cm.
STRN: FHWA/CA/TL-93/15
1. Motor vehicles--Automatic location systems. 2. Global Positioning System. 3. Detectors. 4. Dead reckoning (Navigation)

03 MAR 94 29604442 TLBAsc

NARCISSISM.

BC
553
.N36
M54
1990

Miller, Alice.
[Drama des begabten Kindes. English]
The drama of the gifted child / Alice Miller ; translated from the German by Ruth Ward ; [new introduction by the author]. -- [New York] : BasicBooks, c1990.
xxi, 118 p. ; 21 cm.
ISBN 0-465-01691-X (paper)

1. Narcissism. 2. Self-esteem. 3. Psychology, Pathological.

22 FEB 94 23900709 TLBAsc 91-148218r92

PAVEMENTS, ASPHALT--ADDITIVES.

TE
270
.B87
C45
1992

Button, Joe W.
Cement coating material aggregates for use in asphalt pavements / by Joe W. Button and Vidyasagar Jagadam ; sponsored by Texas Department of Transportation. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
ix, 88 p. : ill. ; 28 cm. -- (Research report ; 1253-1F)
STRN: FHWA/TX-91/1253-1F
1. Pavements, Asphalt--Additives. 2. Pavements, Asphalt concrete--Additives. 3. Aggregates (Building materials)--Evaluation.

01 MAR 94 28173690 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--LIVE LOADS--TESTING.

TE
270
.A47
B87
1992

Akram, Tayyeb.
Estimating damage effects of dual vs. wide base single tires with multidepth deflectometers / by T. Akram, T. Scullion. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, VA : Available through National Technical Information Service, 1992]
ix, 36 p. : ill. ; 28 cm. -- (Research report ; 1184-1)
STRN: FHWA/TX-92/1184-1
1. Pavements, Asphalt concrete--Live loads--Testing. 2. Pavements, Asphalt concrete--Maintenance and repair. 3. Trucks--Tires--Sizes.

03 MAR 94 29672357 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--RECYCLING.

TE
275
.Y68
B92
1993

Young, Brad.
Evaluation of 100% rap recycled mix using microwave technology / by Brad Young. -- [Atlanta, Ga.] : Georgia Dept. of Transportation, Office of Materials and Research, [1993]
viii, 25 leaves : ill. ; 28 cm.
STRN: FHWA-GA-93-9015

1. Pavements, Asphalt concrete--Recycling. 2. Microwave heating.

01 MAR 94 28624225 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--TESTING.

TE
270
.K56
B92
1993

Kim, Ok-Kee.
Evaluation of backcalculation methods to predict pavement layer moduli / Ok-Kee Kim and William A. Nokes. -- [Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research, [1993]
164 p. in various pagings : ill. ; 28 cm.
STRN: FHWA/CA/TL-94/11

1. Pavements, Asphalt concrete--Testing. 2. Pavements--Live loads--Testing. 3. Pavements--Subgrades--Testing. 4. Non-destructive testing.

03 MAR 94 29860139 TLBAsc

PAVEMENTS, CONCRETE--ADDITIVES.

TE
278
.S54
S64
1993

Sherman, Matthew R.
Solidification/stabilization of contaminated spent blasting media in Portland cement concretes and mortars / by A.G. Garner ... [et al.]. -- Austin : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 81 p. : charts ; 28 cm. -- (Research report ; no. 1315-1)
STRN: FHWA/TX-93+1315-1

1. Pavements, Concrete--Additives. 2. Waste products as road materials. 3. Portland cement--Additives.

09 MAR 94 29033864 TLBAsc

PAVEMENTS, CONCRETE--OVERLAYS--EVALUATION.

TE
220.3
.C37
S77
1993

Carpenter, S. H.
Structural characterization of asphalt concrete overlays placed on heavily trafficked concrete pavements / S.H. Carpenter. -- McLean, Va. : U.S. Dept. of Transportation, Federal Highway Administration, Research and Development ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vii, 107 p. : ill. ; 28 cm.
STRN: FHWA-RD-91-029
1. Pavements, Concrete--Overlays--Evaluation. 2. Pavements, Asphalt--Evaluation. 3. Pavements, Concrete--Illinois--Maintenance and repair.

09 MAR 94 29604454 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR.

TE
220
.D48
1992

Developent of image algorithms for automated pavement distress evaluation system / by Paul Chan ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 57 p. : ill. ; 28 cm. -- (Research report ; 1189-2F)
STRN: FHWA/TX-92/1189-2F

1. Pavements--Maintenance and repair. 2. Pavements--Cracking. 3. Image processing.

01 MAR 94 29453884 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR.

HE
131
.T687r
no.1392

Maintenance of roadway pavement and structures. -- Washington, DC : National Academy Press, 1993.
vii, 148 p. : ill. ; 23 cm. -- (Transportation research record ; no. 1392)
ISBN 0-309-05464-8

1. Pavements--Maintenance and repair. 2. Roads--Maintenance and repair.

15 FEB 94 28951491 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR.

TE
220
.C52
S87
1992

Chan, Paul.
System hardware for acquisition and automatic processing of pavement distress videolog / by Paul Chan, Ashok Rao, Robert L. Lytton. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 57 p. : ill. ; 28 cm. -- (Research report ; 1189-1)
STRN: FHWA/TX-92/1189-1

1. Pavements--Maintenance and repair. 2. Pavements--Cracking. 3. Image processing.

09 MAR 94 29443936 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR--MANAGEMENT.

BE
131
.1687r
1387

Pavement management systems / Transportation Research Board, National Research Council. -- Washington, DC : National Academy Press, 1993.
v, 119 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1387)
ISBN 0-309-05468-0

1. Pavements--Maintenance and repair --Management.

15 FEB 94 29345854 TLBAsc

REINFORCING BARS--TESTING.

TA
683.42
.S78
1993

Studies on damage and corrosion performance of fabricated epoxy-coated reinforcement / by K.Z. Kahhaleh ... [et al.] ; conducted for the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xiii, 66 p. : ill. ; 28 cm. -- (Research report ; 1265-1)
STRN: FHWA/ TX-93+1265-1

09 MAR 94 28860296 TLBAsc SEE NEXT CRD

PLUMBING--HANDBOOKS, MANUALS, ETC.

REF.
TH
6125
.W566
N37
1993

Woodson, R. Dodge (Roger Dodge), 1955-
National plumbing codes handbook / R. Dodge Woodson. -- New York, N.Y. : McGraw-Hill, c1993.
xvi, 285 p. : ill. ; 23 cm.
ISBN 0-07-071769-9

1. Plumbing--Handbooks, manuals, etc.

03 MAR 94 27223118 TLBAsc 92-43491

ROAD DRAINAGE--TEXAS.

TE
215
.G39
E92
1992

Gay, Derek A.
El Paso moisture barrier study / by Derek A. Gay, Robert L. Lytton. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service 1992]
vii, 34 p. : ill. ; 28 cm. -- (Research report ; 953-1F)
STRN: TX-92/953-1F

1. Road drainage--Texas. 2. Roads--Texas--Subgrades.

01 MAR 94 28050786 TLBAsc

POST-TENSIONED PRESTRESSED CONCRETE--TESTING.

TG
340
.G56
E92
1993

Ghorbanpoor, Alireza.
Evaluation of post-tensioned concrete bridge structures by the impact-echo technique / [Al Ghorbanpoor]. -- McLean, Va. : Federal Highway Administration, Turner-Fairbank Highway Research Center ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vii, 85 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-096

1. Post-tensioned prestressed concrete--Testing. 2. Bridges, Concrete--Maintenance and repair. 3. Reinforced concrete--Corrosion.

01 MAR 94 29547167 TLBAsc

ROADS--DESIGN AND CONSTRUCTION.

TE
180
.B36
C66
1992

Hancher, Dona E.
Construction contract time determination / by Dona E. Beachar, William F. McFarland, and Rifat T. Alabay. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, VA : available through National Technical Information Service, 1992]
xi, 134, [63] p. : ill. ; 28 cm. -- (Research report ; 1262-1F)

1. Roads--Design and construction. 2. Road construction contracts.

01 MAR 94 28959712 TLBAsc

RAILROAD ENGINEERING.

BE
131
.T687r
no.1381

Recent issues in rail research. -- Washington, D.C. : National Academy Press, 1993.
v, 59 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1381)
ISBN 0-309-05424-9 (pbk.)

1. Railroad engineering.

15 FEB 94 28067344 TLBAsc 93-13655

ROADS--MAINTENANCE AND REPAIR--MANAGEMENT.

BE
131
.T687o
no.361

Hyman, William A. (William Albert), 1944-
Field demonstrations of advanced data acquisition technology for maintenance management / W.A. Hyman and R.M. Alielor and T.M. Alexander. -- Washington, D.C. : National Academy Press, 1993.
115 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program report, ISSN 0077-5614 ; 361)
ISBN 0-309-05359-5

1. Roads--Maintenance and repair--Management. 2. Roads--Maintenance and repair--Data processing.

15 FEB 94 29782806 TLBAsc 93-61590

ROADS--TEXAS--FINANCE.

TE
355.3
.F3
I87
1992

Ieser, Steve.
Evaluation of financing alternatives for Texas transportation / by Steve Ieser, Nicole Ballouz, and William F. McFarland ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, U.S. Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; Springfield, Va. : National Technical Information Service [distributor, 1992]
xiv, 179 p. : ill. ; 28 cm. -- (Research report ; 1277-1F)

03 MAR 94 28581819 TLBAsc SEE NEXT CRD

SCIENCE--DICTIONARIES.

REF.
Oversize
Q
123
.M34
1994

McGraw-Hill dictionary of scientific and technical terms / Sybil P. Parker, editor in chief.. -- 5th ed. -- New York : McGraw-Hill, 1994.
xvii, 2194, 48 p. : ill. ; 29 cm. + 1 computer disk (3 1/2 in.).
ISBN 0-07-042333-4

1. Science--Dictionaries. 2. Technology--Dictionaries.

15 FEB 94 28929076 TLBAsc 93-34772

TRAFFIC ACCIDENTS--DATA PROCESSING.

TE
131
.T687ay
no.192

O'Day, James.
Accident data quality / James O'Day. -- Washington, D.C. : National Academy Press, 1993.
48 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 192)
ISBN 0-309-05317-X

1. Traffic accidents--Data processing. 2. Traffic accidents--Statistical methods.

16 FEB 94 29737916 TLBAsc 93-61252

TRAFFIC ASSIGNMENT--MATHEMATICAL MODELS.

TE
336
.T68
B46
1992

Benson, J. D.
A comparative analysis of two capacity restraint assignment models used in Texas / by Jimmie D. Benson and George B. Drasser ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xi, 76 p. ; 28 cm. -- (Research report ; no. 1153-5)
STRN: FHWA/ TX-89/1153-5

01 MAR 94 28090774 TLBAsc SEE NEXT CRD

TRAFFIC CONGESTION--UNITED STATES.

TE
336
.C64
I46
1993

Implementing effective travel demand management measures : inventory of measures and synthesis of experience / [Richard Kuzmyak ... et al.] ; prepared by Cossia Corporation and The Institute of Transportation Engineers in association with Georgia Institute [sic] of Technology, K.T. Analytics, Inc., E.H. Pratt, Consultant, Inc. ; prepared for Federal Highway Administration and Federal Transit Administration. -- Washington, D.C. : U.S. Dept. of Transportation : Distributed in cooperation with Technology Sharing Program, [1993]
1 v. (various pagings) ; 28 cm.

01 MAR 94 29555366 TLBAsc SEE NEXT CRD

TRAFFIC FLOW.

TE
336
.T7
P56
1993

Piper, Janis L.
The state-of-the-practice in forecasting turning flows / by Janis L. Piper, David F. Pearson, and George B. Dresser. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : available through National Technical Information Service, 1993]
1 v. (various pagings) : ill. ; 28 cm. -- (Research report ; 1235-1i)
1. Traffic flow. 2. Roads--Interchanges and intersections. 3. Transportation--Forecasting. 4. Transportation--Planning. 5. Traffic engineering.

09 MAR 94 29043053 TLBAsc

TRAFFIC SAFETY--RESEARCH.

TE
131
.T687r
no.1401

Highway and traffic safety and accident research, management, and issues : safety and human performance / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 124 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1401)
ISBN 0-309-05474-5

1. Traffic safety--Research. 2. Traffic accident investigation.

15 FEB 94 29744488 TLBAsc

TRAFFIC SURVEYS--TEXAS--DALLAS.

TE
372
.D2
J68
1992

Jou, Rong-Chang.
Daily variability of commuter decisions : Dallas survey results / by Rong-Chang Jou, Hani S. Mahmassani and Thomas Joseph. -- Austin : Center for Transportation Research, the University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 66 p. : ill. ; 28 cm. -- (Research report ; no. 1216-1)
STRN: FHWA/TX-93+1216-1

1. Traffic surveys--Texas--Dallas. 2. Commuters--Texas--Dallas--Attitudes. 3. Commuting--Texas--Dallas.

03 MAR 94 28523881 TLBAsc

TRANSPORTATION AND STATE--UNITED STATES--STATES--EVALUATION.

TE
131
.T687n
no.357

Measuring state transportation program performance / M.F. Reed, R.A. Luettich, and L.P. Lamm. -- Washington, D. C. : National Academy Press, 1993.
85 p. : ill. ; 28 cm. -- (Report (National Cooperative Highway Research Program), ISSN 0077-5614 ; 357)
ISBN 0-309-05355-2

1. Transportation and state--United States--States--Evaluation.

15 FEB 84 29374927 TLBAsc 93-61138

TRANSPORTATION--PLANNING.

TE
131
.T687r
no.1400

Planning and programming, land use, public participation, and computer technology in transportation / National Research Council, Transportation Research Board. -- Washington, D.C. : National Academy Press, 1993.
v, 112 p. : ill. ; 28 cm. -- (Transportation research record ; 1400)

1. Transportation--Planning. 2. Land use, Urban. 3. Transportation--Electronic equipment--Computers.

15 FEB 84 29487035 TLBAsc

TRUCK ACCIDENTS--RESEARCH.

TE
131
.T687r
no.1407

Large-vehicle safety research : safety and human performance, public transit / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 57 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1407)
ISBN 0-309-05552-0

1. Truck accidents--Research. 2. Trucks--Safety measures.

15 FEB 84 29744469 TLBAsc

UNITED STATES. FEDERAL EMERGENCY MANAGEMENT AGENCY--RULES AND PRACTICE.

HV
555
.06
P42
1993

Peach, J. Dexter.
Disaster management : recent disasters demonstrate the need to improve the Nation's response strategy : statement of J. Dexter Peach, Assistant Comptroller General, Resources, Community, and Economic Development [Division], before the Committee on Governmental Affairs, United States Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
26, [2] p. ; 28 cm. -- (Testimony ; GAO/T-RCED- 93-20)

03 MAR 84 28208148 TLBAsc SEE NEXT CRD

WAGES--LOCAL TRANSIT--UNITED STATES--STATISTICS--PERIODICALS.

REF.
HD
4966
.S82
U5

Top hourly wage rate summary. -- Washington, DC : American Public Transit Association,
v. ; 28 cm.
Continues: Top hourly wage rate summaries.

1. Wages--Local transit--United States--Statistics--Periodicals. 2. Wages--Bus drivers--United States--Statistics--Periodicals.

03 MAR 84 23082323 TLBAsc

WASTE PRODUCTS AS ROAD MATERIALS--ENVIRONMENTAL ASPECTS.

TE
200
.E53
1993

Engineering and environmental aspects of recycled materials for highway construction : appendix I / D. Bloomquist ... [et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vii, 212 p. ; 28 cm.
STEN: FHWA-RD-93-088

1. Waste products as road materials--Environmental aspects. 2. Waste products as road materials--Evaluation. 3. Road materials--Environmental aspects. 4. Tires, Rubber--Recycling.

01 MAR 84 28237250 TLBAsc

WOMEN--PSYCHOLOGY.

HQ
1206
.B46
T66
1991

Bepko, Claudia.
Too good for her own good : searching for self and intimacy in important relationships / Claudia Bepko & Jo-Ann Krestan. -- New York : Harper Perennial, 1991, c1990.
xii, 256 p. : ill. ; 20 cm.
ISBN 0-06-092081-5 (pbk.)

1. Women--Psychology. 2. Responsibility. 3. Self-esteem. 4. Interpersonal relations.

22 FEB 84 25124927 TLBAsc 89-46071

CONTENTS

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 JANUARY/FEBRUARY 1994

NEWS

AIRPORTS
Star-shaped airport for Ben Gurion; Passenger traffic figures, Kansai/LAX rows keep charges issue alive; diary 2

Letters, industry share prices 3

INDUSTRY
Industry contracts 5

ATC
FAA to put ATC operations on a commercial footing, ATC contracts 6

NEW PRODUCT REVIEW
Air traffic control, freight handling equipment, tow tractors, catering vehicles 8

AIRPORTS

PRIVATISATION
Rethink needed for privatisation plans 13

Confusion reigns in the UK 17

LATIN AMERICA
Mexico expects traffic surge from NAFTA deal 21

GROUND HANDLING
Radical thinking on the Frankfurt ramp 25

MIDDLE EAST
Arab airports rebound 27
Doha takes to the sea 28
Amman sees tounsts return 29

EMERGENCY VEHICLES
Large aircraft, large trucks, Fast entry to crashed aircraft 30

AIR QUALITY
Sweden moves on air 31

ATC

WORLD SURVEY
Worldwide equipment plans 33

ATC'94 CONFERENCE AND EXHIBITION
Global meeting point 39

INTERVIEW

DIRECTOR, HAMBURG AIRPORT
Dr Claus Lau 40

Front cover: Spending on ATC equipment is rising steeply particularly in eastern Europe and the Far East. The *Jane's Airport Review* worldwide ATC Market Survey looks at current and future buying trends in this section of the industry. *See story page 33*

Cover picture supplied by TBV Professional Services

NEXT MONTH

The March issue will include the following features:

- **Lighting:** US airports face new regulations regarding lights. We look at the technology available to help meet the new standards
- **Apron vehicles:** A look at new ways to manage the ownership, operation and maintenance of apron vehicle fleets
- **London's airports:** Planning constraints threaten the development of London's airports which could mean they will lose out to growing competition from Europe
- **Meteorology:** A look at the impact of increasing automation in Met reports to airline and ATC operations
- ATC'94: Conference/Exhibition report
- **Buyer's Guide:** Security equipment

CONTENTS

JOURNAL OF THE AMERICAN PLANNING ASSOCIATION
Winter 1994
Volume 60 • Number 1

ARTICLES

The New 'Burbs:
The Exurbs and Their Implications for Planning Policy 45
Judy S. Davis, Arthur C. Nelson, and Kenneth J. Dueker

The Politics of Enacting State Legislation to Enable Local Impact Fees:
The Pennsylvania Story 61
Robert A. Peters

Transfer of Planning Technology and Local Political Economy:
A Retrospective Analysis of Calcutta's Planning 71
Tridib Banerjee and Sanjoy Chakravorty

Rail Transit and Joint Development:
Land Market Impacts in Washington, D.C. and Atlanta 83
Robert Cervero

Journal of
Structural Engineering
Volume 120 Number 2 February 1994

TECHNICAL PAPERS

Seismic Behavior of Plain- and Reinforced-Masonry Buildings.
Miha Tomaževič and Polona Weiss 323

Seismic Vulnerability of Flat Slab-Core Buildings
Somaprasad R. Hosahalli and Ahmet E. Aktan 339

Strength of FRC Corbels in Flexure.
Nijad I. Fattuhi 360

Flexural Strength of Profiled Beams
Deric J. Oehlers, Howard D. Wright, and Matthew J. Burnet 378

Temperature Effect of Viscoelastic Dampers during Earthquakes.
C. S. Tsai 394

Unstiffened Strip Approach for Perforated Wall Studs.
Thomas H. Miller and Teoman Pekoz 410

Nonlinear Finite Element Analysis of Deteriorated RC Slab Bridge
B. M. Shahrooz, I. K. Ho, A. E. Aktan, R. de Borst, J. Blaauwendraad, C. van der Veen, R. H. Iding, and R. A. Miller 422

Inelastic Link Element for EBF Seismic Analysis
James M. Ricles and Egor P. Popov 441

Theoretical and Experimental Evaluation of FRP Components and Systems.
Sotiris N. Sotiropoulos, Hota V. S. GangaRao, and Ahmed N. K. Mongi 464

Wind-Induced Nonlinear Lateral-Torsional Buckling of Cable-Stayed Bridges.
Virote Boonyapinyo, Hitoshi Yamada, and Toshio Miyata 486

Guidelines to Minimize Floor Vibrations from Building Occupants
Sarah E. Mouring and Bruce R. Ellingwood 507

Stress and Strain in Curved Noncracked Concrete Members
Makoto Kawakami and Amin Ghali 527

Elastic Buckling Strength of Gusset Plate Connections
J. J. Roger Cheng, Michael C. H. Yam, and S. Z. Hu 538

Steel-Deck-Reinforced Concrete Diaphragms. I.
W. Samuel Easterling and Max L. Porter 560

Steel-Deck-Reinforced Concrete Diaphragms. II.
W. Samuel Easterling and Max L. Porter 577

Evaluation of Code Accidental-Torsion Provisions from Building Records.
Juan Carlos De la Llera and Anil K. Chopra 597

Application of Structural Optimization.
M. Z. Cohn and A. S. Dinovitzer 617

Finite Element Modeling of Continuous Posttensioned Voided Slab Bridges.
Rajan Sen, Mohsen Issa, Xianghong Sun, and Antoine Gergess 651

DISCUSSIONS

Ultimate Load Test of Slab-on-Girder Bridge. Baidar Bakht and Leslie G. Jaeger.
By Najl Arwashan 670

Finite Element Analysis of Thin-Walled Curved Beams Made of Composites. G. S. Palani and Sundaramoorthy Rajasekaran.
By Yeong-Bin Yang and Shyh-Rong Kuo.
Closure by authors 671

Creep Effects in Composite Beams with Flexible Shear Connectors. Angelo Marcello Tarantino and Luigino Dezi.
By Zdeněk P. Bažant. Closure by authors 674

Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam. Edwin P. Russo and Gregory Garic.
By Victor H. Cortinez 676

Design Aides for Reinforced Concrete Columns. Bao-Jun Sun and Zhi-Tao Lu.
By Juan Carlos Molano Toro 678

Journal of
Structural Engineering

Volume 120 Number 1 January 1994

Technical Papers

Nonlinear Response of Torsionally Coupled Base Isolated Structure
R. S. Jangid and T. K. Datta 1

Plastic Collapse at Lap Joints in Pressurized Cylinders under Axial Load
Jin-Guang Teng 23

Heterogeneous Hardening Plasticity Model for Concrete.
H. C. Chan, Y. K. Cheung, and Y. P. Huang 46

Interface Model Applied to Fracture of Masonry Structures.
Hamid R. Lotfi and P. Benson Shing 63

Evaluation of Projects for Rehabilitation of Highway Bridges
J. O. Sobanjo, George Stukhart, and Ray W. James 81

Nonlinear Finite-Element Model of Complete Light-Frame Wood Structures
Bohumil Kasal, Robert J. Leichti, and Rafik Y. Itani 100

Seismic Damage-Control Design of Gypsum-Roof Diaphragms
Sashi K. Kunnath, Mehrdad Mehrain, and William E. Gates 120

Reliability-Based Optimum Design for UBC and Nondeterministic Seismic Spectra
C. C. Chang, J. F. Ger, and F. Y. Cheng 139

Dual-Level Approach for Seismic Design of Asymmetric-Plan Buildings
Rakesh K. Goel and Anil K. Chopra 161

Reliability Assessment of Prestressed Concrete Beams
Ali S. Al-Harthy and Dan M. Frangopol 180

Beam-Buckling Analysis via Automated Rayleigh-Ritz Method
C. M. Wang, L. Wang, and K. K. Ang 200

Modeling of Cyclic Moment-Rotation Response of Double-Angle Connections
Mario De Stefano, Antonello De Luca, and Abolhassan Astaneh-Asl 212

State-of-the-Art Report on Seismic Performance of Unreinforced Masonry Buildings
Michel Bruneau 230

Static Response of Fiberglass Pretensioned Beams
Rajan Sen, Mohsen Issa, Zeying Sun, and Mohsen Shahawy 252

Vibration Testing for Nondestructive Evaluation of Bridges. I: Theory.
Mahmod M. Samman and Mrinmay Biswas 269

Vibration Testing for Nondestructive Evaluation of Bridges II: Results.
Mahmod M. Samman and Mrinmay Biswas 290

Discussions

Finite Element Modeling of Concrete Expansion and Confinement F. J. Vecchio.
By Kypros Pilakoutas. Closure by author 308

Roof-Snow Load for Seismic-Design Calculations. Michael J. O'Rourke and Robert S. Speck
By John Webster Brown. Closure by authors 309

Reviewers of the *Journal of Structural Engineering* 313

PLANNING CONTENTS

American Planning Association Vol. 60, No. 1 January 1994

7 **Hell on Wheels.** Jane Holtz Kay takes to the road—with a vengeance. Kicking off a year-long series on transportation.

11 **Winging It With ISTEA.** The federal regs are out, but state and local governments are still looking for guidance, notes Linda Howe.

15 **In First Place. . .Michael Barker.** A new executive director takes the helm at APA. By Sylvia Lewis.

19 **Brainstorming by Byte.** Putting computers to work for better meetings—in Planning Practice.

24 **Room to Roam.** Janet Fairbanks and Lan Xu Toma explain why the San Diego region is a national model for habitat conservation.

30 KIDS CITY

Cover: Drawing by John Massey.

15

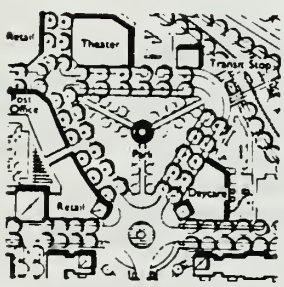


5 **From the Capitals**
27 **Tech**
Recycled products
28 **Planning News**
Theme parks. Louisville plan.
30 **APA News**
San Francisco conference
PAB update
32 **From the Board**
34 **Letters**
Bravo for the CCC
34 **Planners Library**
Great streets. Impact fees.
37 **Commissioners Memo**
Training manual coming
39 **Conference Calendar**
40 **Consultant Directory**
46 **Viewpoint**
The forting up phenomenon

PLANNING CONTENTS

American Planning Association Vol. 60, No. 2 February 1994

18



16



8 **Bay Area Trilogy.** Gerald Adams's take on San Francisco, Oakland, and San Jose.

16 **San Francisco Treats: Five Special Places.** Todd Bressi conducts a tour.

18 **Peter's Pockets.** A profile of Peter Calthorpe and his California-style neotraditionalism. By Gary Delsohn.

22 **Future Tense.** A regional computer model helps planners weigh growth alternatives. John Landis desribes it in Planning Practice.

26 **Up the Down Economy.** Bill Fulton and Morris Newman find some bright spots in the California recession.

5 **From the Capitals**
30 **Planning News**
Earthquake, San Antonio plan.
32 **APA News**
Petition candidates.
34 **From the Board**
Is zoning relevant?
34 **Letters**
Reverse commuting, NAFTA.
36 **Planners Library**
Men with a mission.
38 **Conference Calendar**
40 **Consultant Directory**
46 **In the Works**
San Jose's Communications Hill

Cover: Photo of downtown San Francisco © 1994 Jane Lidz.

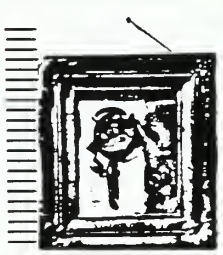
MBE
Minority • Business • Entrepreneur
Volume 11, Number 1
January/February 1994



6 Dream Team—Cordoba Corporation's George L Pla brings out the star in each of his employees—and is turning his consulting firm into a major player.



12 Private Lines—For growth or expansion capital a private placement offers more flexibility than other financing alternatives. But watch out—it's not for the fain of heart.



18 Different Drummers—Whether it's travel and tourism or just helping people get around a little easier—these entrepreneurs take innovative approaches to doing business.

24 Eye of the Beholder?—In the five years since the Supreme Court's *Croson* decision, the disparity study has developed into an art form. What does it really say about reality?

34 Making Tracks—Los Angeles' Metropolitan Transit Authority assists minority contractors in becoming bondable through a unique program.

37 The Real Goal—"Unusual reliance" on large primes is no way to develop small disadvantaged businesses. Enforcing the law *is*.

TRANSPORTATION

An International Journal Devoted to the Improvement of Transportation Planning and Practice

CONTENTS Volume 21 No. 1 February 1994

Articles

John Pucher, Modal shift in Eastern Germany. Transportation impacts of political change 1

James G. Strathman, Kenneth J. Dueker & Judy S. Davis, Effects of household structure and selected travel characteristics on trip chaining 23

Erik Ferguson, Kevin Hodge & Kathryn Berkovsky, Psychological benefits from vanpooling and group composition 47

Chandra R. Bhat & Frank S. Koppelman, A structural and empirical model of subsistence activity behavior and income 71

Florence Inzenili & Sergio R. Jara-Díaz, Uncertain demand, modal competition and optimal price-capacity adjustments in air transportation 91

Contributors to this issue 103

TUNNELS & TUNNELLING
DECEMBER 1993 VOL 25 NO 12

Comment 5

World News 7, 8, 9, 11, 12

Road tunnels support agricultural revival 17
TURKEY *Peter Darling, The Editor, brings us this report on the tunnels which will aid the transport of produce from Turkey's kitchen garden.*

Classification systems for payment purposes 22
ROCK CLASSIFICATION *David Hodkin, Donaldson Associates, assesses the various systems for classifying rock for payment purposes*

Monster machine to relieve Tokyo floods 29
JAPAN *Some of the most advanced robotic automation is employed on the huge 13.9m o.d. TBM engaged on flood alleviation tunnels in Tokyo. John Hellings reports*

Letters to the Editor 34

Planning the tunnels for the high-speed link 37
BRITISH TUNNELLING SOCIETY *The meeting at the Institution of Civil Engineers on November 18 1993 tackled the various routes devised for the high-speed rail link from the Channel Tunnel to London. A P Dyke, Union Railways, P F Murphy, Mott MacDonald, and G Lance, Sir William Halcrow & Partners, were the presenters*

Hydraulic hammers for no-blast applications 40
BREAKERS *Technical journalist David Lawson reports on equipment that has become a valuable asset to the tunnelling industry*

Business & Finance 43

James Clark Medal 45

Contracts & Orders 46

Dates & Events 50

Volume 125, Number 2

Public Works

February, 1994



28 Surveying for the interchange of I-5 and California Routes 22 and 57



32 Albuquerque's upgraded wastewater plant employs 21 mgd submersibles



47 Guidelines for effective sports field lighting

28.
Efficiency and Safety Found in Robotic Surveying
Safety and speed are paramount as Caltrans crews survey a major Los Angeles-area intersection FRED HENSTRIDGE

30.
Wastewater District Uses GIS to Help Pass Bond Measure
Geographical information system is used by Kansas county to increase public awareness of its activities JON CHRISTENSEN

32.
Pump Station Features Submersibles in Dry Pit
Prior difficulties with screw pump installation led to selection of submersibles for treatment plant upgrade.

34.
Causeway Reopening Benefits People and Wildlife
New technology is used to rebuild causeway to an island in the Great Salt Lake GLEN E SAUNDERS and SIDNEY W SMITH

37.
Solar Street Lights Help Revitalize Downtown
Solar-powered street lighting project is the first of its kind VINCENT CZAPLEWSKI

38.
New Coating Protects Water Tank Linings
Potable Water Epoxy formulation improves blister resistance and corrosion protection.

40.
Comprehensive Stormwater Management Study
Study will gather data for Tucson's master plan to control water quantity and qual. TIM MORRISON MALCOLM ALTER and ROBERT H WASSUM

WWS WORLD WIDE SHIPPING

FEBRUARY/MARCH 1994 Vol. 57, No. 1

Contents

FEATURES

Bulk Carriers — 48
By PAUL SLATER, *Chairman, 1st Int'l Group of Companies*

Canadian Rails — 26
By I.B SCOTT, *Chairman, CEO, CP Rail System*

Canadian Rails — 29
By KATHERINE F BRAID, *Sr Vice President, CP Rail System*

Containers — 83
By TANG ZHIMIN, *Beijing, Special to WWS/World Wide Shipping*

Duty Drawback — 88
By AL D'AMICO, *President, Duty Drawback Service, Inc*

Engineer's Notebook — 77
By ALBERT T ROSSELLI, *Sr Vice President, TAMS Consultants, Inc*

Foreign Exchange — 14
By MICHAEL A RINKUS, *Vice President, Mktg & Sales, John V Carr & Son, Inc*

Insurance — 20
By EDWARD O'HARE, *Director, Nat'l Insurance News Service*

International Air Freight — 24
By JULIAN KEELING, *President, Consolidators Int'l, Inc*

U.S. Customs — 12
By DAVID SERKO, *Senior Partner, Serko & Simon, NY, Contributing Editor, WWS/World Wide Shipping*
and By CHRISTOPHER M KANE, Esq., *Associate*

WWS/STAFF REPORTS

Advertizers Index — 70

ASAP — 16
By ROBERTA GREENING, *Special to WWS/World Wide Shipping*

Bulk Shipping — 33
By CARLO J SALZANO, *WWS, Washington*

Calendar of Events — 82

Emery Worldwide — 22
By PATRICIA B DEMETRIO, *WWS, Features*

Equipment — 84
By MARTIN C PILSCH, JR., *WWS, Equipment*

Florida Bulk Shipping — 35
By PAUL SCOTT ABBOTT, *WWS, South Atlantic*

Pacific Coast Ports — 53
By SUZANNE CAUTHEN, *Sr. Editor, WWS, West Coast*

Port of San Francisco — 73
By SUZANNE CAUTHEN, *Sr. Editor, WWS, West Coast*

Pot-pour-ri — 71
By SUZANNE CAUTHEN, *Sr. Editor, WWS, West Coast*

Republic of Panama — 80
By PATRICIA B DEMETRIO, *WWS, Features*

River Ports — 50
By GEORGE ADCOCK, *WWS, Mid-Atlantic*

Washington Report — 4
By CARLO SALZANO, *WWS, Washington, DC*



Page 37 Port of Tampa's Pat Burke



Page 38 Port Everlades Bulk Facilities



Page 41 Port of Houston Bulk Facilities



Page 44 Port of San Diego Bulk Facilities

Vol. 35 No. 1 January 1994 ISSN 0041-0683

Traffic Engineering + Control

Managing Editor
Kerri Lumley
Advertisement Director
Michael Stoneham
Production Secretary
Janet Orna

Editorial Advisory Board
A P de Boer
R J Bridle
Professor Sir Colin Buchanan
Thomas B Deen
J A Gaffney
Aase Ishac
J Kienhout
Dr M G Lay
Professor Dr Ing W Leutzbach
Brian V Martin
Professor Adolf D May
Maurice Milne
Alec Sweeney
Bennett Summerfield
Professor Cao Shino Tian
Professor T E H Williams

Editorial Consultants
Professor R E Allsop Research
S E K Bolton Pergamon
J D G F Howe Developing countries
R W Huddart Road safety
D Bayliss Public transport

2 A method for the rapid estimation of TRANSYT link flows on multi-lane roads
A Budd and R Salmon

9 The long-term analysis of accident remedial measures at high-risk sites in Essex
M Gregory and D Jarrett

14 Pedestrian subways in urban areas: some observations concerning their use
A Demetsky and R Ashworth

19 The evaluation of residential traffic calming: a new multi-criteria approach
D T Brennan

35 Transport Studies Unit: University of Oxford Annual Report 1993
P B Goodwin

12 Parking
38 News
34 Industrial News
36 Buyers Guide
47 Classified Advertisements
48 Coming Events

Vol. 35 No. 2 February 1994 ISSN 0041-0683

Traffic Engineering + Control

Managing Editor
Kerri Lumley
Advertisement Director
Michael Stoneham
Production Secretary
Janet Orna

Editorial Advisory Board
A P de Boer
R J Bridle
Professor Sir Colin Buchanan
Thomas B Deen
J A Gaffney
Aase Ishac
J Kienhout
Dr M G Lay
Professor Dr Ing W Leutzbach
Brian V Martin
Professor Adolf D May
Maurice Milne
Alec Sweeney
Bennett Summerfield
Professor Cao Shino Tian
Professor T E H Williams

Editorial Consultants
Professor R E Allsop Research
S E K Bolton Pergamon
J D G F Howe Developing countries
R W Huddart Road safety
D Bayliss Public transport

52 Commercial vehicle responses to congestion charging
J Fearon M Scott and M Green

56 The ADEPT Project
1 Overview
P T Blythe and P J Hills

63 Approaches to changing modal split: a strategy and policy context
H K Bessington

66 Public transport initiatives in Surrey
A Teer T Gulliksen and G Carson

75 University of London Centre for Transport Studies
Report for 1993
R E Allsop

72 Parking
68 News
82 Industrial News
87 Buyers Guide
100 Classified Advertisements
100 Coming Events

Traffic Engineering + Control is published monthly (11 times a year, with two summer issues combined) by Printerhall Limited

Editorial, Advertisement and TRAFFEX Exhibition Offices
Printerhall Limited 29 Newman Street London W1P 3PE England
Telephone 071-636 3956 (International +44 71-636 3956
Fax 071-436 7016 (International +44 71-436 7016
Telex 8813271 (Ref A204

Annual Subscriptions 1994
U K and Eire £48.00 post paid
U S A and Canada U S $110.00 post paid (Add U S $110.00 for airmail postage
All other countries £56.00 post paid (Add £56.00 for airmail postage

Address for Subscriptions and Claims
TEC Subscription Department
P O Box 12 March Cambridgeshire PE15 8SR England
Telephone 0354 58080 (International +44 354 58080
Fax 0354-53965 (International +44 354 53965

Claims for non-receipt must reach the Subscription Department within three months of the date of issue from subscribers in the U K and Eire and within six months from subscribers in all other countries

Single copies can be obtained from the Publishers price £6.00

Traffic Engineering + Control is available in microform from University Microfilms International at:
Department P R 30-32 Mortimer Street London W1N 7RA England and at
Department P R 300 North Zeeb Road Ann Arbor Michigan 48106 U S A

Second Class Postage paid at Rahway N J
Postmaster: Send address corrections to *Traffic Engineering + Control*
c/o Mercury Airfreight International Ltd Inc
2323 Randolph Avenue Avenel N J 07001 (U S Mailing Agent

Printed in England © 1994 Printerhall Limited

JANUARY–FEBRUARY 1994 NUMBER 170

TR NEWS

3 **The HOV Experience**
Role of HOV Facilities, 3
HOV Lessons from the Dulles Toll Road, 5

10 **Metric Highways Revisited**

13 **Cooperation, Compromise, and Consensus Pennsylvania's Approach to Developing Transportation Improvements**

19 **ISTEA and Intermodal Planning**

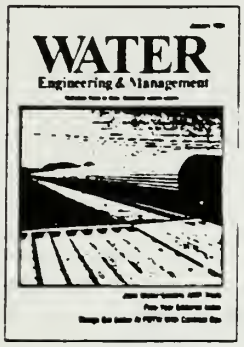
22 **TRB Addresses the Transportation Needs of Native Americans**

24 **Measuring Quality**

2 **Letters**
26 **Profiles**
28 **News Briefs**
31 **TRB Highlights**
35 **Calendar**
37 **Bookshelf**
New TRB Publications, 37

WATER
Engineering & Management
Vol 141, No 1

January 1994



Our Cover: Responding to an anticipated requirement that open reservoirs must be covered, the Los Angeles Department of Water & Power installed a 600,000 sq ft painted aluminum cover on one of its properties. The article on page 14 explains why design had to consider seismic safety, electrical grounding, appearance and life cycle cost.

FEATURES

Contract O&M at POTW Improves Operations, Reduces Costs
This case study on a Rhode Island wastewater treatment plant explains how costs have been reduced and effluent quality improved as a result of contracting out operations and maintenance functions 20

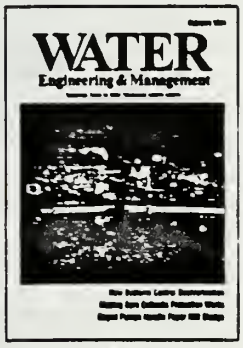
Downunder Project Looks At Joint Water/Electric Metering
Two Australian public service utilities, in a joint trial of remote metering of water and electrical services, saved money and time but also raised some important questions 23

Difficult Meter Reading Job Gets Quicker and Better
The conversion from strictly manual to semi-automatic meter reading has made a Portland, Maine, operation function more efficiently in many ways 26

Editorial Index
A comprehensive five-year editorial index contains the feature stores that ran in WEM from 1989 through 1993 28

WATER
Engineering & Management
Vol 141, No 2

February 1994



Our Cover: A paper mill in Georgia, served by this primary clarifier and two others, solved a serious pump clogging problem in the sludge handling operation by switching to a bank of submersible pumps. See our story on page 21.

FEATURES

Making Sure Cathodic Protection Works
This article describes cathodic protection methods for corrosion reduction in underground pipelines to extend life 18

Pilot Study Points Way To Iron/Manganese Removal
The results of a study to determine the best process for reducing iron and manganese in drinking water are discussed 18

Caged Pumps Fix Paper Mill's Sludge Troubles
An industrial installation of submersible pumps helps to solve a paperboard mill's sludge disposal problem 21

Anaerobic/Aerobic Combination Treats High-Strength Wastewater
A new process has been applied to treat high-strength wastewater from a sugar refinery 22

Controlled Dechlorination Achievable With New Systems
This article describes dechlorination monitoring and control systems for municipal and industrial wastewater plants 24

Berkeley Journal of Employment and Labor Law

VOLUME 14 1993 NUMBER 2

Copyright © 1993 by Berkeley Journal of Employment and Labor Law

ARTICLES

REASONABLE ACCOMMODATION UNDER THE AMERICANS WITH DISABILITIES ACT: THE LIMITATIONS OF REHABILITATION ACT PRECEDENT — *Barbara A. Lee* 201

THE PROSPECTS OF PENSION FUND SOCIALISM — *William H. Simon* 251

COMMENT

RETROACTIVITY OF THE CIVIL RIGHTS ACT OF 1991: A DECISION NOT TO DECIDE — *Karen Rosenberg Stein* 275

BOOK REVIEW

COMPLIANCE AND LITIGATION RESOURCES FOR IMPLEMENTING THE AMERICANS WITH DISABILITIES ACT OF 1990 — *Mary Dryovage* 318

RECENT PUBLICATIONS 329

ABSTRACTS 333

INDEX 344

EMPLOYEE RELATIONS LAW JOURNAL

467 Charting a New Course for Regulation of the Workplace — *William J. Kilberg*

471 Health Reform and Employee Health Benefits Programs — *Sally A. Rosenberg, Cecilia M. Eytalis*

485 The Tip of the Iceberg: Early Trends in ADA Enforcement — *James H. Coil III, Charles M. Rice*

507 Union Corporate Campaigns and Inside Games as a Strike Form — *Herbert R. Northrup*

551 National Origin Discrimination or Employer Prerogative? An Analysis of Language Rights in the Workplace — *Gregory C. Parliman, Rosalie J. Shoerman*

567 Hostile Environment Sexual Harassment: Has *Harris* Really Changed Things? — *Barbara Berish Brown, Intra L. Germanis*

579 Guest Column— Book Review — *Janice R. Bellace*

587 Employment Litigation— The Corporate Ombudsman and Employment Law: Maintaining the Confidentiality of Communications — *William L. Kandel, Sheri L. Frumer*

603 Labor-Management Relations— The *Associated Builders* Case—The Supreme Court Closes the Boston Harbor to Nonunion Contractors — *Christopher J. Martin*

611 Employee Benefits— New Developments in Nonqualified Deferred Compensation — *Paul T. Shultz, Russell E. Hall*

621 Safety and Health— Compliance with Clean Air Act Employer Trip Reduction Requirements — *Pamela S. Reiman, Stephen C. Yohay*

639 Practical Labor Lawyer— The Broadening Scope of Harassment in the Workplace — *Barry A. Hartstein, Thomas M. Wilde*

655 Review of the Literature— Sexual Harassment Plaintiffs: Does It Matter How They Spoke and Dressed? — *James A. Burns, Jr.*

661 Index to Volume 19

OL. 19, NO. 4 SPRING 1994

The Journal of Air Law and Commerce

VOLUME 59 DEC. 1993-JAN. 1994 NUMBER 2

TABLE OF CONTENTS

UNITED STATES' USE OF ECONOMIC SANCTIONS, TREATY BENDING, AND TREATY BREAKING IN INTERNATIONAL AVIATION ..... *Gary E. Davidson* 291

IMMIGRATION ISSUES AND AIRLINES ..... *Constance O'Keefe* 357

BOOK REVIEW

WHY AIRPLANES CRASH: AVIATION SAFETY IN A CHANGING WORLD ..... *Reviewed by J.E. Murdoch III* 395

COMMENTS

PRE- AND POST-IMPACT PAIN AND SUFFERING AND MENTAL ANGUISH IN AVIATION ACCIDENTS ..... *Louisa Ann Collins* 403

MILITARY MESS: CERCLA LIABILITY AND THE BASE CLOSURE AND REALIGNMENT ACT ..... *Daniel C. Steppick* 449

INTERNATIONAL TRAVELERS AND SHIPPERS BEWARE: IS ANYONE LIABLE WHEN CUSTOMS AGENTS DAMAGE PROPERTY? ..... *Scott A. Wold* 493

CURRENT LITERATURE

BIBLIOGRAPHY ..... *Meloney Cargil* 551
Jim Jenkins

LABOR LAW JOURNAL

contents

Vol. 45, No. 2, February, 1994

66 Who's What in Labor

67 The Intentional Tort Exception to the Exclusive Remedy of Workers' Compensation
By Heidi Kendall-Sage

79 The Erosion of the Employment-at-Will Doctrine: Recent Developments
By Marvin J. Levine

90 Strict Construction of Health Insurance Contracts
By Stuart Bass

102 Collective Bargaining under the Family and Medical Leave Act
By Frederick L. Douglas

110 Unresolved Issues in Hostile Environment Claims of Sexual Harassment
By Robert K. Robinson, Ross L. Fink, and Billie Morgan Allen

115 The Jencks Rule
By Douglas M. Nabhan

121 The Changing Scope of Union Organizing
By Victor G. Devinatz

124 External Job Sharing
By J.H. Foegen

127 Labor Management Relations

TRANSPORTATION PRACTITIONERS JOURNAL

Vol. 61 Fall No. 1

Executive Committee 2
Vice Presidents by District 3
ATP National Committees 4
Chapter Activities 14
Transportation Practitioners Journal Welcomes New Members to Board of Editors 18
Editorial Policy 19
Photographs from 64th Annual Meeting, San Antonio, Texas 20
Environmental Considerations in a Railroad Land Purchase — Robert E. Cattanach and Kenneth H. Podpeskar 23
Three Shots at State Economic Regulation of Interstate Motor Carriers — Samuel Ewer Eastman 31
Analyzing the U.S. Domestic Airline Industry Part I: Market Globalization — L. Milton Gisson and Michael K. Jones 39
The Supreme Court Speaks Again on Freight Rate Undercharge Issues — William P. Jackson, Jr. 51
Book Review — Comes Now the Interstate Commerce Practitioner: Evolution, Change and the Regulatory Life-Cycle — Grant M. Davis 61
Antitrust 69
Aviation 73
Canada 75
Court Decisions 79
Department of Transportation 83
Federal Energy Regulatory Commission 87
Labor 90
Motor Transportation 99
Organization, Practice and Procedure 103
Rail Transportation 104
Railroad Labor 107
Safety and Hazardous Materials Transportation 108
Third Parties 112
Fabulae Animus Sunt 116
Application for Membership 121
Qualifications for Membership 123
Publications Available at Association Headquarters 124
Order Form for Publications 126
Deceased 102

Transportation Practitioners Journal (ISSN 8756-9302) (USPS 255-140) is published quarterly by the Association of Transportation Practitioners. The subscription price of the Journal to active and retired members ($27.50) is included in their membership dues. The subscription price to nonmembers is $55. (Prepayment required.) Single copy $15. Editorial office and known office of publication: 19564 Club House Road, Gaithersburg, MD 20879-3002. Second class postage paid at Washington, DC, and additional mailing office. Postmaster: Send address changes to Transportation Practitioners Journal, 19564 Club House Road, Gaithersburg, MD 20879-3002. *Copyright © 1993 by Association of Transportation Practitioners. All rights reserved. Printed in the United States of America.*

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

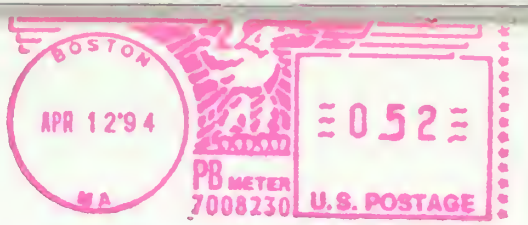
Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.



STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116



Leonard Adams
Government Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS. STL1.3: 1994/2

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISTIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

GOVERNMENT DOCUMENTS
COLLECTION

MAY 1 8 1994

University of Massachusetts
Depository Copy

March • April • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

ACCESS TO AIRPORTS--CALIFORNIA--SAN FRANCISCO BAY AREA.

TL
725.3
.A2
H37
1988

Harvey, Greig.
Ground access to San Francisco International Airport / written by Greig Harvey. -- Berkeley, CA : Deakin, Harvey, Skabardonis, [1988]
75 leaves : maps, charts ; 28 cm.

1. Access to airports--California--San Francisco Bay Area. 2. Choice of transportation. 3. San Francisco International Airport.

23 MAR 94 19584 TLBAsc

AERIAL PHOTOGRAPHY IN TRAFFIC ENGINEERING--DATA PROCESSING.

TA
593
.S33
D53
1992

Schenk, Tony.
Digital data acquisition and archiving system / by Tony Schenk, Charles K. Toth, David Atkins. -- [Columbus] : Ohio State University Dept. of Geodetic Science and Surveying ; Springfield, VA : Available through the National Technical Information Service, 1992.
vi, 92 p. : ill. ; 28 cm.
STRN: FHWA/OH-91/012

1. Aerial photography in traffic engineering--Data processing. 2. Aerial photography in road surveying--Data processing.

22 APR 94 27716213 TLBAsc

AERONAUTICS--DIRECTORIES.

REF.
TL
512
.W67

World aviation directory. -- Washington : American Aviation Publications, v. : ill. ; 20 cm.
Semiannual.
Continues: American aviation world wide directory.
Absorbed: World space directory.
ISSN 0043-826X = World aviation directory

1. Aeronautics--Directories. 2. Aeronautics--United States--Directories.

26 APR 94 2413063 TLBAsc 40-11496925

AGED AUTOMOBILE DRIVERS.

TL
152.3
.C87
I46
1992

Cushman, Laura A.
The impact of cognitive decline and dementia on driving in older adults / by Laura A. Cushman. -- Washington, D.C. : AAA Foundation for Traffic Safety, 1992.
iv, [20 p.] : ill. ; 28 cm.

1. Aged automobile drivers. 2. Automobile drivers. 3. Traffic safety.

18 MAR 94 27730069 TLBAsc

AGED--TRANSPORTATION--MIDDLE WEST.

HQ
1063.5
.N43
1990

The need for transportation alternatives for the rural elderly / by Mary Kihl ... [et al.]. -- [Ames, Iowa] : Midwest Transportation Center, 1990.
vi, 95 p. : ill., charts, maps ; 28 cm.

1. Aged--Transportation--Middle West. 2. Aged automobile drivers--Middle West. 3. Rural transit--Middle West.

08 APR 94 24298408 TLBAsc

AIDS TO NAVIGATION--HANDBOOKS, MANUALS, ETC.

VK
560
.S64
W37
1992

Smith, M. W.
Waterway design manual / M.W. Smith. -- Washington, DC : U.S. Coast Guard, Office of Engineering, Logistics, and Development ; Springfield, Va. : Available through the National Technical Information Service, [1992]
1 v. (various pagings) : ill. ; 28 cm.
STRN: CG-D-18-92

1. Aids to navigation--Handbooks, manuals, etc. 2. Electronics in navigation--Handbooks, manuals, etc. 3. Harbors--Traffic control--Handbooks, manuals, etc.

26 APR 94 27639039 TLBAsc

AIR QUALITY MANAGEMENT--CALIFORNIA.

TD
886.5
.C2
C34
1990

California. Air Resources Board. Transportation Strategies Group.
California Clean Air Act transportation requirements guidance / Air Resources Board, Office of Strategic Planning, Transportation Strategies Group. -- [Sacramento, Calif. : Air Resources Board, 1990]
iv, 39, [24] p. : chart ; 28 cm. -- (CCAA guidance paper ; #2)

1. Air quality management--California. 2. Automobiles--California--Motors--Exhaust gas. 3. Traffic regulations--California.

26 APR 94 21278460 TLBAsc

AIRPORTS--ILLINOIS--LOCATION.

TL
725.3
.L6
U54
1993

United States. General Accounting Office.
New Chicago-area airport : site comparison, selection process, and federal funding : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1993]
35 p. : map ; 28 cm.
1. Airports--Illinois--Location. 2. Airports--Indiana--Location. 3. Airports--Illinois--Planning. 4. Airports--Indiana--Planning.

15 APR 94 27665781 TLBAsc

AIRPORTS--PLANNING--CONGRESSES.

TL
725.3
.P5
N37
1991

National Aviation System Planning Symposium (1991 : Minneapolis, Minn.)
National Aviation System Planning Symposium : July 11-13, 1991, Minneapolis, Minnesota. -- Washington, D.C. (2101 Constitution Ave., N.W., Washington 20418) : TRB, 1992.
56 p. ; 28 cm.

1. Airports--Planning--Congresses. 2. Airports--United States--Planning--Congresses.

11 APR 94 27938347 TLBAsc 92-247840

AMTRAK--FINANCE.

HE
2791
.A3
A472
1991

Amtrak.
Towards self-sufficiency in the year 2000 / Amtrak. -- [Washington, D.C.] : Amtrak, [1991]
29 leaves : map ; 28 cm.

1. Amtrak--Finance. 2. Railroads--United States--Passenger traffic. 3. Federal aid to transportation--United States.

22 APR 94 27323023 TLBAsc

ASPHALT CONCRETE--SPECIFICATIONS.

TE
275
.P47
1993

Performance-related specifications for asphalt-concrete : Phase II / [James F. Shook ... et al.]. -- McLean, Va. : Federal Highway Administration, Office of Research and Development ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xii, 230 p. : ill. ; 28 cm.
SIRN: FHWA-RD-91-070

1. Asphalt concrete--Specifications. 2. Pavements, Asphalt concrete--Testing. 3. Pavements, Asphalt concrete--Performance.

15 APR 94 29554816 TLBAsc

AUTOMATIC DATA COLLECTION SYSTEMS.

HE
5614
.N48
1993

New and emerging technologies for improving accident data collection / [Warren E. Hughes ... et al.]. -- McLean, Va. : Federal Highway Administration, Research and Development ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 107 p. : ill. ; 28 cm.
SIRN: FHWA-RD-92-087

1. Automatic data collection systems. 2. Automobile drivers' records--Data processing. 3. Traffic accidents--Records--Data processing. 4. Motor vehicles--Automatic location systems.

15 APR 94 28132341 TLBAsc

AUTOMOBILE DRIVERS--PSYCHOLOGY.

HE
131
.T687r
no.1403

Driver performance : measurement and modeling, IVHS, information systems, and simulation / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 106 p. : ill. ; 28 cm. -- (Transportation research record ; no. 1403)
ISBN 0-309-05551-2

1. Automobile drivers--Psychology. 2. Highway communications. 3. Human engineering. 4. Intelligent Vehicle Highway Systems.

16 MAR 94 29823775 TLBAsc

AUTOMOBILE INDUSTRY AND TRADE--UNITED STATES.

KF
27
.E5524
1992

United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Energy and Power.
What's ailing the U.S. auto industry? : hearings before the Subcommittee on Energy and Power of the Committee on Energy and Commerce, House of Representatives, One Hundred Second Congress, second session, January 16 and April 30, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1992.
iii, 161 p. ; 24 cm.
ISBN 0-16-038422-8
1. Automobile industry and trade--United States

26 APR 94 26961850 TLBAsc 93-181648

AUTOMOBILES, ELECTRIC--CONGRESSES.

TL
220
.S48
1992

S/EV 92, solar and electric vehicles : [proceedings 9-10 October 92, World Trade Center, Boston] / presented by Northeast Sustainable Energy Association. -- Greenfield, Mass. : Northeast Sustainable Energy Association, [1992?]
2 v. : ill. ; 28 cm.

1. Electric vehicles--Congresses. 2. Automobiles, Electric--Congresses. 3. Solar vehicles--Congresses. 4. Solar cars--Congresses.

15 APR 94 28005842 TLBAsc

AUTOMOBILES--FIRES AND FIRE PREVENTION.

TL
158
.R32
M67
1993

Radwan, A. E.
Motor vehicle fires : trends and characteristics. -- Washington, DC. : AAA Foundation for Traffic Safety, c1993.
30 p. : graphs, tables ; 28 cm.

1. Automobiles--Fires and fire prevention. 2. Motor vehicles--Fires and fire prevention.

08 APR 94 28746518 TLBAsc

BICYCLES.

TL
410
.B46
P79
1992

Benton, B. Andrew.
Psyched on bikes : the bicycle owner's handbook / B. Andrew Benton. -- 1st ed. -- Blue Ridge Summit, PA : Tab Books, c1992.
x, 168 p. : ill. ; 24 cm.
ISBN 0-8306-1987-9 (pbk.)

1. Bicycles.

04 APR 94 25048858 TLBAsc 91-46783

BREAST--CANCER--TREATMENT.

A-V
RC
280
.B8
B73
1988

Breast cancer [videorecording] / WGBH Boston in association with American health magazine. -- Northbrook, Ill. : MTI Film & Video, c1988.
1 videocassette (28 min.) : sd., col. ; 1/2 in.

1. Breast--Cancer--Treatment.

25 MAR 94 21218760 TLBAsc

BRIDGES--FLOORS--DESIGN AND CONSTRUCTION.

TG
325.6
.Y68
D47
1993

Young, G.K.
Design of bridge deck drainage / [G.K. Young, S.E. Walker, F. Chang]. -- Washington, D.C. : Federal Highway Administration, Office of Engineering [and] Office of Technology Applications, [1993]
xi, 123 p. : ill. ; 28 cm. -- (Hydraulic engineering circular ; no. 21)

1. Bridges--Floors--Design and construction. 2. Bridges--Drainage systems--Design and construction. 3. Road drainage.

11 MAR 94 29895885 TLBAsc

BRIDGES--FLOORS--MAINTENANCE AND REPAIR.

TG
325.6
.M37
N48
1989

Maser, Kenneth R.
New technology for bridge deck assessment. Phase I / by Massachusetts Institute of Technology, Center for Transportation Studies and Center for Construction Research and Education in cooperation with the University of New Hampshire. -- Cambridge, MA : The Center ; Springfield, Va. : National Technical Information Service [distributor, 1989]
2 v. in 1 : ill., charts ; 28 cm.
STRN: FHWA/NETC-89/01
1. Bridges--Floors--Maintenance and repair. 2. Bridges--Floors--Testing--Thermographic methods. 3. Radar.

11 APR 94 29629811 TLBAsc

BRIDGES--FOUNDATIONS AND PIERS.

TG
320
.T55
E92
1982

Timmerman, David B.
Evaluation of mechanically stabilized embankments as support for bridge structures / by David B. Timmerman. -- Akron, Ohio : University of Akron, Dept. of Civil Engineering, [1982]
iv, 70 leaves : ill., maps ; 28 cm.
STRN: FHWA/OH-81/014

1. Bridges--Foundations and piers. 2. Embankments--Design and construction. 3. Earthwork.

22 APR 94 27246154 TLBAac

BRIDGES, IRON AND STEEL.

BE
131
.T687n
no.355

Notch toughness variability in bridge steel plates / K.B. Frank ... [et al.]. -- Washington, D.C. : National Academy Press, 1993.
61 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program report, ISSN 0077-5614 ; 355)
ISBN 0-309-05353-6

1. Bridges, Iron and steel. 2. Plates, Iron and steel. 3. Fracture mechanics. 4. Notch effect. 5. Bridges--Welded joints--Cracking.

28 APR 94 29967807 TLBAsc 93-60389

BRIDGES, PLATE-GIRDER--MAINTENANCE AND REPAIR.

TG
315
.B34
F53
1993

Baldwin, James W.
Field repair procedures for web cracks in two girder bridges / by James W. Baldwin, Jr. and B.J. Salane. -- Columbia, Mo. : University of Missouri-Columbia, Dept. of Civil Engineering, [1993?]
viii, 91 p. : ill. ; 28 cm.

1. Bridges, Plate-girder--Maintenance and repair. 2. Bridges--Welded joints--Cracking. 3. Bridges, Plate-girder--Vibration.

18 MAR 94 29645091 TLBAsc

BRIDGES--TESTING.

TG
305
.F8
P76
1992

Fu, Gongkang.
Proof testing of highway bridges / Gongkang Fu, Panayota Saridis, Jianguo Tang. -- Albany, N.Y. : Engineering Research and Development Bureau, New York State Dept. ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
v, 35 p. : ill. ; 28 cm. -- (Research report ; 153)
STRN: FHWA/NY/RR-92/153

1. Bridges--Testing. 2. American Association of State Highway and Transportation Officials.

11 APR 94 26486724 TLBAsc

BRIDGES, WOODEN--QUALITY CONTROL--
HANDBOOKS, MANUALS, ETC.

Oversize
TG
375
.D38
Q34
1992

Davalos, Julio F.
Quality assurance and inspection manual for timber bridges / by Julio F. Davalos ... [et al]. Constructed Facilities Center, West Virginia University. -- [Harrisburg, Pa.] : Pennsylvania Dept. of Transportation, Office of Research and Special Studies, 1992.
xiii, 200 p. : ill. ; 30 cm.

1. Bridges, Wooden--Quality control--Handbooks, manuals, etc. 2. Bridges, Wooden--Design and construction--Handbooks, manuals, etc. 3. Bridges, Wooden--Maintenance and repair.

05 APR 94 25930743 TLBAsc

BUSES--UNITED STATES--PURCHASING.

TL
232
.C66
1993

Conducting pre-award and post-delivery audits for bus procurements / prepared by Booz Allen & Hamilton, Inc. -- Washington, D.C. : Federal Transit Administration, Office of Grants Management : Distributed in cooperation with Technology Sharing Program, [1993]
1 v. (various pagings) ; 22 cm.

1. Buses--United States--Purchasing. 2. Bus lines--United States--Management. 3. Bus lines--United States--Auditing.

26 APR 94 30080466 TLBAsc

BUS LANES--MARYLAND--BETHESDA--
PLANNING.

TA
1207
.N67
1992

North Bethesda transitway feasibility study : final report / prepared by Douglas & Douglas, Inc. ; in association with Thomas J. McGean, Deleuw, Cather & Company, [and] Basile, Baumann, Prost & Associates. -- [Washington, D.C. : U.S. Dept. of Transportation, Federal Transit Administration, 1992]
1 v. (various pagings) : ill. (some folded) ; 28 cm.
1. Bus lanes--Maryland--Bethesda--Planning. 2. Bus lanes--Maryland--Bethesda--Finance. 3. High occupancy vehicle lanes--Maryland--Montgomery County. 4. Personal rapid transit--Maryland--Bet hesda--Planning.

11 APR 94 27308709 TLBAsc

CAMBRIDGE RESERVOIR WATERSHED (MASS.)

TD
385
.C35
1989

Cambridge Reservoir Watershed protection plan / prepared by Metropolitan Area Planning Council, prepared for Massachusetts Water Resources Authority and Cambridge Water Department. -- Boston, MA : The Council, [1989]
2 v. : ill., maps (some fold.) ; 28 cm.

1. Water--Pollution--Massachusetts--Cambridge Reservoir Watershed. 2. Water--Pollution--Law and legislation--Massachusetts. 3. Cambridge Reservoir Watershed (Mass.)

26 APR 94 21892668 TLBAsc

BUS SHELTERS--CALIFORNIA--ORANGE
COUNTY.

HE
5633
.C2
O723
1981

Orange County Transit District. Planning Dept.
Design guidelines for bus facilities / prepared by the Orange County Transit District, Planning Department. -- [Garden Grove, Calif.] : Orange County Transit District, [1981]
ii, 35 p. : ill. ; 28 cm.

1. Buses--Specifications. 2. Bus lanes--Specifications. 3. Roads--Specifications. 4. Local transit--Stations--Specifications. 5. Bus shelters--California--Orange County.

28 APR 94 11416605 TLBAsc

CHILD CARE SERVICES--STANDARDS--
UNITED STATES--STATES--EVALUATION.

HQ
778.7
.U6
A35
1992

United States. General Accounting Office.
Child care : states face difficulties enforcing standards and promoting quality : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
33 p. : ill. ; 28 cm.

1. Child care services--Standards--United States--States--Evaluation. 2. Child care services--United States--States--Quality control--Evaluation.

26 APR 94 27118610 TLBAsc

BUSES--ACCESS FOR THE PHYSICALLY
HANDICAPPED.

TL
232.2
.H86
I46
1993

Bunter-Zaworski, Katharine M.
Improving bus accessibility systems for persons with sensory and cognitive impairments / prepared by Katharine M. Bunter-Zaworski, Martha Hron. -- Washington, DC : Federal Transit Administration, Office of Technical Assistance [and Safety] ; Springfield, VA : Available through the National Technical Information Service, [1993]
1 v. (various pagings) ; 28 cm.
STRN: FTA-OS-11-0007-93-1
1. Buses--Access for the physically handicapped. 2. Physically handicapped--Transportation. 3. Mentally handicapped--Transportation.

16 MAR 94 28248063 TLBAsc

CHOICE OF TRANSPORTATION.

HE
371
.A3
H37
1990

Hartgen, David T.
Transportation myths : travel behavior, system condition, and land use / David T. Hartgen. -- Charlotte, N.C. : University of North Carolina at Charlotte, Transportation Academy, [1990]
12, [13] leaves : ill. ; 28 cm. -- (Transportation publication report ; no. 41)

1. Choice of transportation. 2. Traffic estimation--United States. 3. Transportation--United States.

22 APR 94 27404281 TLBAsc

COMPULSIVE EATING.

A-V
RC
552
.C65
G73
1993

Gresson, Janet.
It's not what you're eating, it's what's eating you (sound recording) / Janet Gresson. -- New York, NY : Simon & Schuster Audio, p1993.
1 sound cassette (ca. 90 min.) : analog, Dolby processed. -- (Sound ideas)
Simon & Schuster Audio: 79655-0 :.
ISBN 0-671-79655-0

1. Compulsive eating. 2. Twelve-step programs. 3. Talking books.

25 MAR 94 27260526 TLBAec

CONTRACTING OUT--UNITED STATES--STATES--COST EFFECTIVENESS.

HD
3865
.A4
M37
1993

Martin, Lawrence L.
How to compare costs between in-house and contracted services / by Lawrence Martin. -- Los Angeles, CA : Reason Foundation, 1993.
22 p. ; 28 cm. -- (How to guide / Reason Foundation ; #4)

1. Contracting out--United States--States--Cost effectiveness.

18 MAR 94 28923040 TLBAec

CRIMES ABOARD BUSES.

BE
5620
.C7
B371
1993

Bartgen, David T.
Public fear of crime and its role in bus transit use/ by David T. Bartgen, Gerald L. Ingalls, Timothy W. Owens. -- Charlotte, N.C.: Center for Interdisciplinary Transportation Studies, The University of North Carolina, 1993
90 leaves: ill., 28cm.

1. Crimes aboard buses. 2. Local transit crimes.

08 APR 94 29986976 TLBAec

CULVERTS--TESTING.

TE
213
.088
022
1993

Oswald, Charles S.
Observed behavior of a concrete arch culvert / Charles S. Oswald and Richard W. Furlong. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xv, 172 p. : ill. ; 28 cm. -- (Research report ; 932-1F)
SIRN: FHWA/TX-93+932-1F

1. Culverts--Testing. 2. Culverts--Design and construction. 3. Concrete arches--Testing.

11 APR 94 29378360 TLBAec

DEVELOPMENTALLY DISABLED--SERVICES FOR--MASSACHUSETTS.

HV
1570.5
.U652
M426
1992

Massachusetts Developmental Disabilities Council.
Putting the pieces together : creating community supports for individuals and families : Massachusetts developmental disabilities state plan, federal fiscal years 1992-1994 : 1993 update / editor, Jody Williams. -- [Boston : Massachusetts Developmental Disabilities Council, 1992]
223 p. : ill. ; 28 cm.
1. Developmentally disabled--Services for--Massachusetts. 2. Developmentally disabled--Government policy--Massachusetts.

11 APR 94 28852278 TLBAec 93-621511

DRINKING AND TRAFFIC ACCIDENTS.

HE
5620
.D7
A84
1992

Atkin, Charles K.
The influence of responsible drinking TV spots and automobile commercials on young drivers / by Charles K. Atkin, William DeJong, Lawrence Wallack. -- Washington, D.C. : AAA Foundation for Traffic Safety, 1992.
[v], 51 p., 31 p. ; 28 cm.

1. Drinking and traffic accidents. 2. Television advertising.

18 MAR 94 28132382 TLBAec

DRIVEWAYS--DESIGN AND CONSTRUCTION.

TE
279.3
.W54
R42
1991

Williams, Marc D.
Recommended design guidelines for the vertical alignment of driveways / by Marc D. Williams, Daniel B. Fambro, Vergil G. Stover. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System, [1991]
viii, 44 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 990-2)

1. Driveways--Design and construction. 2. Roads--Texas--Design and construction.

04 APR 94 26646728 TLBAec

EARTHQUAKE ENGINEERING.

BE
131
.T687r
no.1411

Earthquake-induced ground failure hazards. -- Washington, D.C. : National Academy Press, 1993.
v, 80 p. : ill. ; 28 cm. -- (Transportation research record ; 1411)
ISBN 0-309-05558-X (pbk.)

1. Earthquake engineering. 2. Soil liquefaction.

29 APR 94 30120791 TLBAec

ELECTRONIC TRAFFIC CONTROLS.

Overeize
TE
228
.N57
F73
1993

Nisbet, John.
Freeway and arterial integrated control system / by John Nisbet, Mark Hallenbeck. -- [Olympia, Wash.] : Washington State Dept. of Transportation ; [Springfield, VA : Available through the National Technical Information Service, 1993]
2 v. : ill. ; 29 cm.
STRN: WA-RD 293.1
1. Electronic traffic controls. 2. Traffic signs and signals--Washington (State)--Seattle Metropolitan Area. 3. Traffic flow--Washington (State)--Seattle Metropolitan Area. 4. Express highways--Washington (State)--Seattle Metropolitan Area--Management.

23 MAR 94 28318574 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

TE
228
.I78
I46
1992

Irvine, Yvonne D.
Implementation guidelines for retiming diamond intersections / by Yvonne D. Irvine and Daniel B. Fambro. -- Rev. Dec. 1992. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xviii, 98 p. : ill. ; 28 cm. -- (Research report ; 1164-3)
STRN: FHWA/TX-93/1164-3
1. Electronic traffic controls. 2. Roads--Interchanges and intersections. 3. Traffic signs and signals. 4. PASSER III.

16 MAR 94 29915175 TLBAsc

ENVIRONMENTAL IMPACT STATEMENTS--UNITED STATES.

TD
194.5
.G34
R64
1991

Gakenheimer, Ralph A.
The role of the environmental impact review in transportation planning / by Ralph Gakenheimer and John G. Allen. -- [Cambridge, Mass.] : M.I.T. Center for Transportation Studies, [1991]
76 p. ; 28 cm.

1. Transportation--United States--Planning--Environmental aspects. 2. Environmental impact analysis--United States. 3. Environmental impact statements--United States.

Rev-1 4-6-94 TLBAsc

FEDERAL AID TO TRANSPORTATION--UNITED STATES.

HE
355.3
.F3
U54
1993

United States. General Accounting Office.
Transportation infrastructure : better tools needed for making decisions on using ISTEA funds flexibly : report to Congressional committees / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
42 p. : ill. ; 28 cm.
1. Federal aid to transportation--United States. 2. Local transit--Planning--United States--States. 3. United States. Intermodal Surface Transportation Efficiency Act of 1991.

22 APR 94 29046502 TLBAsc

FERRIES--WASHINGTON (STATE)--PUGET SOUND.

HE
5783
.W2
M37
1993

Margaroni, Steven J.
Ferry landing design criteria. II, Vessel tracking methods for ferry landing design / by Steven J. Margaroni, Charles T. Jahren ; prepared for Washington State Transportation Commission. -- [Olympia, Wash. : Washington State Dept. of Transportation ; Springfield, VA : Available through the National Technical Information Service, 1993]
204 p. in various pagings : ill. ; 28 cm.
STRN: WA-RD 267.1
1. Ferries--Washington (State)--Puget Sound. 2. Imaging systems. 3. Global Positioning System. 4. Navigation--Washington (State)--Puget Sound.

18 MAR 94 29530964 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

HE
131
.T687n
no.359

Adaptation of geographic information systems for transportation / A. P. Vonderohe ... [et al.]. -- Washington, D.C. : National Academy Press : Transportation Research Board, National Research Council, 1993.
[6], 69 p. : ill. ; 28 cm. -- (Report / National Cooperative Highway Research Program, ISSN 0077-5614 ; 359)
ISBN 0-309-05357-8 (pbk)
1. Transportation--Management. 2. Geographic information systems. 3. Transportation--United States--Planning. 4. Information storage and retrieval systems--Transportation.

16 MAR 94 29540005 TLBAsc 93-61362

GEOTEXTILES.

TA
760
.G46
1988

Geotextile engineering workshop : design examples / Prepared for Federal Highway Administration, National Highway Institute. -- Boynton Beach, Fla. : GeoServices Inc., Consulting Engineers, 1988.
iii, 203 p. : ill. ; 28 cm.

1. Geotextiles. 2. Highway engineering--Materials. 3. Road drainage. 4. Roads--Embankments.

23 MAR 94 21347432 TLBAsc

GROUND COVER FIRES--PREVENTION AND CONTROL.

TE
178
.H38
P72
1993

Hauser, Danise S.
Preсuppression of roadside fires / Danise S. Hauser, Wayne G. McCully. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System, [1993]
iii, 23 p. : ill., map ; 28 cm. -- (Research report ; 902-7)
STRN: TX-93/902-7

1. Ground cover fires--Prevention and control. 2. Roads--Texas--Safety measures. 3. Roadside flora--Texas.

15 APR 94 29459295 TLBAsc

HARBORS--MASSACHUSETTS.

TC
224
.M4
L48
1990

Levie, Leslie B.
The state of our harbors : an examination of Massachusetts harbor conditions and related economic parameters. -- Hingham, Mass. (349 Lincoln St., Building 45, Hingham 02043) : Commonwealth of Massachusetts, Dept. of Environmental Management, Division of Waterways, [1990]
ii, 53 p. : map ; 28 cm. -- (Rivers and Harbors Program report)

1. Harbors--Massachusetts. 2. Harbors--Massachusetts--Maintenance and repair.

05 APR 94 26590693 TLHAsc 91-621536

HAZARDOUS SUBSTANCES--GOVERNMENT POLICY--UNITED STATES.

I
55.3
.H3
H32
1989

Hadden, Susan G.
Risk communication about chemicals in your community : a manual for local officials : facilitator's guide (includes participant manual) / prepared by Susan G. Hadden and Barry V. Hales. -- [Washington, D.C.] : U. S. Environmental Protection Agency, 1989.
44, [52] p. : ill. ; 28 cm.

1. Hazardous substances--Government policy--United States. 2. Hazardous substances--Law and legislation--United States 3. Hazardous substances--Accidents--Management--Study and teaching--United States.

05 APR 94 22830796 TLHAsc

HAZARDOUS SUBSTANCES--TRANSPORTATION --LAW AND LEGISLATION.

I
55.3
.H3
H391
1991

United States. General Accounting Office.
Hazardous materials : 1990 Transportation Uniform Safety Act : status of DOT implementing actions / United States General Accounting Office. -- [Washington, D.C.] : U.S. General Accounting Office, [1991]
ii p. ; 28 cm.

1. Hazardous substances--Transportation--Law and legislation. 2. Hazardous substances--Accidents. 3. United States. Hazardous Materials Transportation Uniform Safety Act of 1990.

22 MAR 94 24814995 TLHAsc

HIGH SPEED GROUND TRANSPORTATION--ECONOMIC ASPECTS--UNITED STATES.

TF
1600
.U54
H54
1993

United States. General Accounting Office.
High-speed ground transportation : issues affecting development in the United States : report to the Chairman, Committee on Energy and Commerce, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
54 p. : ill., map ; 28 cm.
1. High speed ground transportation--Economic aspects--United States. 2. High speed ground transportation.

16 MAR 94 29368465 TLHAsc

HIGH SPEED GROUND TRANSPORTATION--UNITED STATES--FINANCE.

TF
1600
.M42
H533
1993

Mead, Kenneth M.
High speed ground transportation : financial barriers to development : statement of Kenneth M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Subcommittee on Transportation, Committee on Appropriations, U.S. House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
13, [4] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-93-23)

24 MAR 94 27828612 TLHAsc SEE NEXT CRD

HIGH SPEED TRAINS--CALIFORNIA--ESTIMATES.

HE
2771
.C2
L42
1993

Leavitt, Dan.
The cost escalation of rail projects : using previous experience to re-evaluate the CalSpeed estimates / Dan Leavitt ; with Sean Ennis and Pat McGovern. -- Berkeley : Institute of Urban and Regional Development, University of California at Berkeley, [1993]
iv, 69, [32] p. : maps ; 28 cm. -- (Working paper ; no. 567)
1. High speed trains--California--Estimates. 2. Railroads--California--Estimates. 3. Railroads--California--Passenger traffic--Planning. 4. California High Speed Rail Project.

26 APR 94 29297892 TLHAsc

HIGHWAY DEPARTMENTS--EMPLOYEES--TRAINING OF--VIRGINIA.

TE
24
.V8
H86
1991

Hunter, Peggi E.
An investigation of the feasibility of interactive videodisc as a training mode for VDOT / Peggi E. Hunter, Michael A. Perfater. -- Charlottesville, Va. : Virginia Transportation Research Council, [1991]
v, 51 p. : ill. ; 28 cm. -- (VTRC ; 91-R25)

1. Highway departments--Employees--Training of--Virginia. 2. Interactive video. 3. Videodiscs. 4. Computer-assisted instruction.

22 MAR 94 24180449 TLHAsc

HOMELESSNESS--UNITED STATES.

HV
4493
.U56
H65
1993

United States. General Accounting Office.
Homelessness : information on and barriers to assistance programs providing foreclosed property : report to the Chairman, Committee on Governmental Affairs, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
72 p. : map ; 28 cm.
1. Housing--United States--Finance. 2. Economic assistance, Domestic--United States--Evaluation. 3. Homelessness--United States. 4. Housing policy--United States.

23 MAR 94 29263605 TLHAsc

HOMEOPATHY--POPULAR WORKS.

RX
71
.C85
E93
1991 Cummings, Stephen, F.N.P.
Everybody's guide to homeopathic medicines / Stephen Cummings, Dana Ullman. -- Rev. and expanded. -- Los Angeles : J.P. Tarcher ; New York : Distributed by St. Martin's Press, 1991.
ix, 321 p. ; 22 cm.
ISBN 0-87477-324-5

1. Homeopathy--Popular works.

28 MAR 94 23382835 TLBAsc 91-13517

INFANTS--PSYCHOLOGICAL ASPECTS.

A-V
BF
720
.P37
I53
1988 Infants have feelings too [videorecording] / WGBH Boston in association with American Health Fitness of Body and Mind. -- Northbrook, Ill. : MTI Film & Video, c1988.
1 videocassette (30 min.) : sd., col. ; 1/2 in. -- (Bodywatch)

1. Infants--Psychological aspects. 2. Parent and child. 3. Infants--Development.

11 MAR 94 19577808 TLBAsc

INTELLIGENT VEHICLE HIGHWAY SYSTEMS.

HE
131
.T687r
no.1408 Intelligent vehicle highway systems / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
vi, 124 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1408)
ISBN 0-309-05555-5

1. Intelligent Vehicle Highway Systems. 2. Traffic flow. 3. Traffic engineering.

29 APR 94 30130205 TLBAsc

INTERNET (COMPUTER NETWORK)

TK
5105.875
.I57
H35
1994 Hahn, Harley, 1952-
The Internet complete reference / Harley Hahn, Rick Stout. -- Berkeley, Calif. : Osbourne McGraw-Hill, c1994.
xxvi, 818 p. : ill. ; 24 cm.
ISBN 0-07-881980-6

1. Computer networks. 2. Internet (Computer network)

15 APR 94 29300714 TLBAsc

LEAD BASED PAINT--REMOVAL--HANDBOOKS, MANUALS, ETC.

TS
698
.L42
1992 Lead paint removal guides : supplement to volume 2 : SSPC - guide 6I (CON), guide for containing debris generated during paint removal operations and SSPC - guide 7I (DIS) guide for the disposal of lead-contaminated surface preparation debris / Steel Structures Painting Council. -- 1st ed. -- Pittsburgh, PA : Steel Structures Painting Council, 1992.
21 p. ; 28 cm.
ISBN 0-938477-73-0
1. Lead based paint--Removal--Handbooks, manuals, etc. 2. Painting, Structural--Handbooks, manuals, etc. 3. Hazardous wastes--Handbooks, manuals, etc.

30 MAR 94 26167044 TLBAsc

LOCAL TRANSIT--ACCOUNTING.

HE
4351
.E86
1981 Establishing a transit performance measurement and reporting system / Deloitte, Haskins & Sells. -- [San Francisco, Calif.] : Deloitte, Haskins & Sells, c1981.
28, A-1 leaves ; 28 cm.

1. Local transit--Accounting. 2. Local transit--Management. 3. Performance standards.

28 APR 94 9204009 TLBAsc

LOCAL TRANSIT CRIME--PREVENTION--HANDBOOKS, MANUALS, ETC.

HV
7431
.B34
I72
1994 Balog, John N.
Transit system security program planning guide / [John N. Balog, Anne N. Schwarz, Bernard C. Doyle]. -- [Washington, D.C.] : Federal Transit Administration, [Office of Technical Assistance and Safety ; Springfield, Va. : Available through the National Technical Information Service, 1994]
106 p. in various pagings : ill. ; 28 cm.
SIRN: FTA-MA-90-7001-94-1
1. Local transit crime--Prevention--Handbooks, manuals, etc. 2. Local transit--Security measures--Handbooks, manuals, etc. 3. Local transit--Management--H andbooks, manuals, etc. 4. Crim e prevention--Handbooks, ma nuals, etc.

22 APR 94 30130503 TLBAsc

LOCAL TRANSIT--ECONOMIC ASPECTS.

HE
4451
.M42
1993 Measurement of transit benefits : final report / prepared by Edward Beimborn ... [et al.]. -- Washington, DC : Federal Transit Administration, [1993]
vi, 141, [15] p. : ill. ; 22 x 28 cm.

1. Local transit--Economic aspects. 2. Local transit--Evaluation.

30 MAR 94 28312857 TLBAsc

LOCAL TRANSIT--ECONOMIC ASPECTS--NEW YORK METROPOLITAN AREA.

HE
4491
.N5
A52
1993

Anas, Alex.
Land values and transit access : modeling the relationship in the New York Metropolitan Area : an implementation handbook / prepared by Alex Anas and Regina Armstrong. -- [Washington, D.C. : U.S. Federal Transit Administration, Office of Technical Assistance and Safety ; Springfield, VA : Available through the National Technical Information Service, 1993]
136 p. : maps ; 28 cm.
STRN: FTA-NY-06-0152-93-1

22 APR 94 30020284 TLBAac SEE NEXT CRD

METRIC SYSTEM--UNITED STATES--HANDBOOKS, MANUALS, ETC.

QC
92
.U54
M47
1992

Metric guide for federal construction / The Construction Subcommittee of the Metrication Operating Committee of the Interagency Committee on Metric Policy. -- 1st ed. -- Washington, D.C. : National Institute of Building Sciences, c1992.
34 p. ; 28 cm.

1. Metric system--United States--Handbooks, manuals, etc. 2. Construction Industry--United States--Handbooks, manuals, etc.

08 APR 94 28249599 TLBAac

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--CARS, LRV--NO.8--DESIGN AND CONSTRUCTION.

TF
920
.M3
T432
1993

Technical provisions for: no. 8 low floor cars. -- [S.l.] : LTK Consulting Services, c1993.
1 v. (various pagings) : ill., plans ; 28 cm.

1. Electric railroads--Massachusetts--Cars. 2. Electric railroads--Cars. 3. Massachusetts Bay Transportation Authority--Cars, LRV--no.8--Design and construction. 4. Massachusetts Bay Transportation Authority--Cars--Contracts and specifications.

Rev-1 3-30-94 TLBAac

MOTOR VEHICLE DRIVERS--LEGAL STATUS, LAWS, ETC.--UNITED STATES.

KF
26
.C69
1993

United States. Congress. Senate. Committee on Commerce, Science, and Transportation.
High Risk Drivers Act of 1993 : report of the Senate Committee on Commerce, Science, and Transportation, on S. 738. -- Washington : U.S. G.P.O., 1993.
ii, 25 p. ; 24 cm. -- (Report / 103d Congress, 1st session, Senate ; 103-199)

1. Motor vehicle drivers--Legal status, laws, etc.--United States. 2. Drinking and traffic accidents--United States. 3. Traffic regulations--United States.

16 MAR 94 29629186 TLBAac

MASSACHUSETTS, SOUTHEASTERN--ECONOMIC CONDITIONS--STATISTICS.

HT
393
.M4
S68

Southeastern Massachusetts fact book : data summary and developer's guide. -- 1981- . -- Marion, Mass. : Southeastern Regional Planning and Economic Development District, 1981-

v. : ill. ; 28cm.
Annual.
Continues: Southeastern Regional Planning and Economic Development District. Base data report.

1. Regional planning--Massachusetts, Southeastern--Statistics. 2. Massachusetts, Southeastern--Economic conditions--Statistics.

01 APR 94 11170878 TLBAac

MOTOR VEHICLES--UNITED STATES--COST OF OPERATION.

TL
151.5
.M32
G64
1992

MacKenzie, James J. (James John), 1939-
The going rate : what it really costs to drive / James J. MacKenzie, Roger C. Dower, Donald D.T. Chen. -- Washington, D.C. : World Resources Institute, c1992.
viii, 32 p. : ill. ; 28 cm. -- (World Resources Institute report)
ISBN 0-915825-77-5 (pbk.)

1. Motor vehicles--United States--Cost of operation. 2. Traffic congestion--United States--Costs.

23 MAR 94 29796868 TLBAac 92-61217

MEGAPLEX (BOSTON, MASS.)

Oversize
HE
356.5
.B7
M43
1993

Megaplex conceptual transportation access study : draft / prepared for Massachusetts Highway Dept. ; prepared by Bechtel/Parsons Brinkerhoff ... [et al.]. -- ill., 72 leaves : ill., maps, plans ; 28 cm.
Boston, Mass. : Bechtel/Parsons Brinckerhoff, 1993.

1. Traffic flow--Massachusetts--Boston. 2. Convention facilities--Massachusetts--Boston--Planning. 3. Sports Facilities--Massachusetts--Boston--Planning 4. Megaplex (Boston, Mass.)

Rev-1 3-31-94 TLBAac

ORIGIN AND DESTINATION TRAFFIC SURVEYS.

HE
131
.T687r
no.1412

Innovations in travel survey methods.
-- Washington, D.C. : National Academy Press, 1993.
v, 94 p. : ill. ; 28 cm. -- (Transportation research record ; 1412)
ISBN 0-309-05559-8

1. Origin and destination traffic surveys. 2. Trip generation.

29 APR 94 29874241 TLBAac

PAVEMENTS, ASPHALT--RECYCLING.

TE
270
.D37
H44
1993

Dash, Umakant.
Hei-way general purpose recycled asphalt material (HEM) / prepared by Umakant Dash. -- [Harrisburg, Pa.] : Pennsylvania Dept. of Transportation, [1993]
iii, 9, [27] p. : ill. ; 28 cm.

1. Pavements, Asphalt--Recycling. 2. Pavements, Asphalt--Additives. 3. Road materials--Evaluation.

18 MAR 94 28132380 TLBAsc

PAVEMENTS, BITUMINOUS--SKID RESISTANCE.

TE
270
.R66
B92
1992

Roque, R.
Evaluation of skid resistance for high-type bituminous surfaces / by R. Roque, G. Dominguez and D.A. Anderson. -- University Park, PA : Pennsylvania Transportation Institute, Pennsylvania State University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xi, 114, [76] p. : ill. ; 28 cm.

1. Pavements, Bituminous--Skid resistance. 2. Pavements, Asphalt--Skid resistance. 3. Pavements--Performance.

11 MAR 94 29426791 TLBAsc

PAVEMENTS, CONCRETE--JOINTS--EVALUATION.

TE
278.2
.S27
E82
1994

Sargand, S. M. (Shad M.)
Evaluation of pavement joint performance / principal investigators: Shad M. Sargand, Glenn A. Hazen ; graduate research assistants: Issam Khoury, Indra Pannila, Robert Rogers. -- Athens : Ohio University, Center for Geotechnical and Environmental Research, Civil Engineering Dept. ; Springfield, Va. : Available through the National Technical Information Service, 1994.
1 v. (various pagings) : ill. ; 28 cm.
SIRN: FHWA/OH-93/021
1. Pavements, Concrete--Joints--Evaluation. 2. Pavements--Ohio--Testing.

28 APR 94 29983106 TLBAsc

PAVEMENTS, CONCRETE--OVERLAYS.

TE
220.3
.S77
1990

Structural overlay strategies for jointed concrete pavements. -- University Park, PA : Pennsylvania Transportation Institute ; Springfield, VA : for sale by National Technical Information Service, 1990.
6 v. : ill.; 28 cm.

1. Pavements, Concrete--Overlays. 2. Pavements, Concrete--Joints--Maintenance and repair. 3. Pavements, Concrete--Maintenance and repair.

10 MAR 94 27182555 TLBAsc

PAVEMENTS, CONCRETE--OVERLAYS--TESTING.

TE
220.3
.M34
I58
1993

Makahaube, Johanes S.
Investigation of parameters affecting the interface bonding of thin concrete overlays due to vehicular vibration / by Johanes S. Makahaube, Soheil Nazarian, and David B. Rozendal. -- El Paso : University of Texas, Center for Geotechnical and Highway Materials Research ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
104 p. : ill. ; 28 cm.
SIRN: FHWA/TX-93 1920-2
1. Pavements, Concrete--Overlays--Testing. 2. Pavements, Concrete--Live loads--Testing. 3. Pavements, Concrete--Moisture.

22 MAR 94 28450213 TLBAsc

PAY EQUITY--WASHINGTON (STATE)--EVALUATION.

HD
6061.2
.U6
P38
1992

United States. General Accounting Office.
Pay equity : Washington State's efforts to address comparable worth : briefing report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
37 p. : ill. ; 28 cm.

1. Pay equity--Washington (State)--Evaluation. 2. Pay equity--Law and legislation--Washington (State)

15 APR 94 26295812 TLBAsc

PAVEMENTS--LIVE LOADS.

TE
250
.S52
N66
1992

Spangler, Elson B.
Noncontact, nondestructive determination of pavement deflection under a moving load / Elson B. Spangler and Harold J. Schell, Surface Dynamics, Inc. -- Bloomfield Hills, Mich. : Surface Dynamics, Inc., 1992.
1 v. (various pagings) : ill. ; 28 cm.

1. Pavements--Live loads.

15 APR 94 26981260 TLBAsc

PEDESTRIANS.

HE
336
.P43
D39
1988

Davis, Scott E.
Predicting pedestrian crosswalk volumes / by Scott E. Davis, L. Ellis King, H. Douglas Robertson. -- [Washington, D.C. : National Research Council, Transportation Research Board, 1988]
28 leaves ; 28 cm.

1. Pedestrians. 2. Roads--Interchanges and intersections.

23 MAR 94 17442948 TLBAsc

PEDESTRIANS--ACCIDENTS.

HE
336
.P43
Q82
1993

Quaye, Kwei.
Pedestrian accidents and left-turning traffic at signalized intersections / by Kwei Quaye, Lars Leden and Ezra Hauer, Safety Studies Group, Department of Civil Engineering, University of Toronto. -- Washington, D.C. : AAA Foundation for Traffic Safety, [1993]
iv, 18 p. : ill. ; 28 cm.

1. Pedestrians--Accidents. 2. Traffic signs and signals.

04 APR 94 29484707 TLBAec

PRIVATIZATION--MASSACHUSETTS.

HD
3865
.M4
P74
1992

Privatization of human services : panacea or placebo? / Human Services Study Team ... [et al.]. -- [Boston, Mass.] : Beacon Hill Institute at Suffolk University, c1992.
114 p. ; 28 cm.

1. Privatization--Massachusetts. 2. Human services--Massachusetts--Contracting out.

15 APR 94 26707784 TLBAec

PRIVATIZATION--UNITED STATES--STATES.

HD
3865
.A4
E33
1993

Eggers, William D.
Designing a comprehensive state-level privatization program / by William D. Eggers. -- Los Angeles, CA : Reason Foundation, 1993.
[1] leaf, 29 p. ; 28 cm. -- (How to guide / Reason Foundation ; #1)

1. Privatization--United States--States. 2. Contracting out--United States--States.

11 MAR 94 28923204 TLBAsc

RAILROADS--CROSSINGS.

TE
228
.P75
1993

A Preliminary laboratory investigation of passive railroad crossing signs / [Nancy Bridwell ... et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
iv, 22 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-153

1. Railroads--Crossings. 2. Traffic signs and signals--Evaluation. 3. Roads--Safety measures.

15 APR 94 29825821 TLBAsc

RAILROADS--UNITED STATES--ACCIDENTS.

HE
1780
.M42
R33
1992

Mead, Kenneth M.
Railroad safety : accident trends and FRA safety programs / statement of Kenneth M. Mead ... -- Washington, D.C. : U.S. General Accounting Office, [1992]
19 p. : ill. ; 28 cm.

1. Railroads--United States--Accidents. 2. Railroads--Safety regulations--United States. 3. United States. Federal Railroad Administration.

05 APR 94 27469580 TLBAec

RAILROADS--UNITED STATES--SAFETY MEASURES.

TF
610
.M37
R42
1993

Markos, Stephanie E.
Recommended emergency preparedness guidelines for passenger trains / [Stephanie E. Markos]. -- Washington, D.C. : Federal Railroad Administration, Office of Research and Development ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
216 p. in various pagings : ill. ; 28 cm.

1. Railroads--United States--Safety measures. 2. Railroads--United States --Passenger traffic. 3. Emergency management--United States.

01 APR 94 28840388 TLBAec

REDUCING DIETS.

A-V
RM
237.7
.O76
E27
1993

Ornish, Dean.
Eat more, weigh less [sound recording] / Dr. Dean Ornish. -- New York NY : Harper Audio, p1993.
1 sound cassette (90 min.) : analog, Dolby processed + 5 recipe cards.
Harper Audio: CPN 1959.
ISBN 1-55994-715-2

1. Reducing diets. 2. Low-fat diet--Recipes.

01 APR 94 28261685 TLBAsc

RETAINING WALLS--TESTING.

TA
760
.B37
F53
1993

Ehsan, John.
Field and laboratory pullout resistance tests for four soil reinforcement systems : report / prepared by John Ehsan. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1993]
132 p. in various pagings : ill. ; 28 cm.
STRN: FHWA/CA/TL-94/04

1. Retaining walls--Testing. 2. Roads--Embankments. 3. Earth pressure.

18 MAR 94 29431666 TLBAec

RIDESHARING--UNITED STATES--STATES.

HE
5620
.R53
L56
1993

Lindquist, Nell Frazer.
Nationol review of statewide rideshare programs and survey of Texas rideshare programs / Nell Frazer Lindquist, Katherine F. Turnbull. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xv, 52 p. : ill. ; 28 cm. --
(Research report ; 1964-1F)
SIRN: FTA-TX/1964-1F
1. Ridesharing--United States--States. 2. Ridesharing--Texas. 3. Commuting--Texas.

11 APR 94 28574422 TLBAsc

ROAD CONSTRUCTION INDUSTRY--UNITED STATES.

IE
180
.U54
B53
1992

United States. General Accounting Office.
Highway contracting : disadvantaged business eligibility guidance and oversight are ineffective : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
24 p. ; 28 cm.

1. Road construction industry--United States. 2. Public contracts--United States. 3. Minority business enterprises--United States. 4. United States. Federal Highway Administration.

22 MAR 94 26785647 TLBAsc

ROAD DRAINAGE--DATA PROCESSING.

TE
215
.J64
U83
1992

Johnson, Gary.
A user experience with HYDRAIN / Gary Johnson. -- Denver, CO : Colorado Dept. of Transportation, [Hydraulics Unit, 1992]
[4] leaves ; 28 cm.
SIRN: CDOH-DID-R-92-06

1. Road drainage--Data processing. 2. Culverts--Design and construction--Data processing. 3. HYDRAIN (Computer program)

22 APR 94 26489614 TLBAsc

ROADS--DESIGN AND CONSTRUCTION.

HE
131
.T687r
no.1409

Maintenance management, traffic safety, and roadsides / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
104 p. : ill. ; 28 cm. --
(Transportation research record, ISSN 0361-1981 ; no. 1409)
ISBN 0-309-05556-3

1. Roads--Design and construction. 2. Pavements--Maintenance and repair--Management. 3. Roadside improvement. 4. Roadside plants.

28 APR 94 30066873 TLBAsc

ROADS--ECONOMIC ASPECTS--NORTH CAROLINA.

HE
355.3
.E3
R64
1989

The Role of transportation in county economic growth and development / by David T. Hartgen ... [et al.]. -- Charlotte, N.C. : University of North Carolina at Charlotte, [Transportation Academy, 1989]
33, [20] p. : ill. ; 28 cm. --
(Transportation publication report ; no. 15)

1. Roads--Economic aspects--North Carolina. 2. Regional planning--North Carolina. 3. Rural development--North Carolina.

05 APR 94 21142686 TLBAsc

ROADS--GUARD FENCES.

TE
228.2
.D37
G84
1992

Dare, Charles E.
Guidelines for guard rail installation on embankments and at bridge ends : low volume roads in Missouri / prepared by Charlee E. Dare. -- [Jefferson City, Mo.] : Missouri Highway and Transportation Dept. ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 70 leaves : ill. ; 28 cm. --
(Study / Missouri Cooperative Highway Research Program ; 91-2)
SIRN: MCHRP 91-2

23 MAR 94 27835673 TLBAsc SEE NEXT CRD

ROADS--UNITED STATES--FINANCE.

HE
355.3
.F3
A44
1985

American Association of State Highway and Transportation Officials.
A new focus for America's highways : recommendations on the Federal-aid Highway Program. -- Washington, D.C. (444 N. Capitol St., N.W., Suite 225, Washington 20001) : American Association of State Highway and Transportation Officials, [1985]
38 p. : ill. ; 28 cm. -- (AASHTO report)

1. Roads--United States--Finance. 2. Federal aid to transportation--United States.

11 APR 94 12178542 TLBAsc 85-211874

ROADS--UNITED STATES--FINANCE.

HE
355.3
.F3
L5
1993

Li, Allen.
Transportation infrastructure : implementation of funding flexibility under ISTEA and use of transportation control measures : statement of Allen Li, Associate Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Subcommittee on Investigations and Oversight, Committee on Public Works and Transportation, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
13, [2] p. ; 28 cm. -- (Testimony ; GAO/T-RCED- 94-50)

22 APR 94 29249048 TLBAsc SEE NEXT CRD

ROADSIDE MARKETING--TEXAS.

TE
177
.R66
N66
1991

Roop, Steve.
Non-highway implications of roadside vending activity in selected Texas counties / by Steve Roop and Dock Burke. -- College Station, TX : Texas Transportation Institute, Texas A&M University System ; Springfield, Va. : Available through the National Technical Information Service, [1991]
xiii, 48 p. : ill., maps ; 28 cm. -- (Research report ; 1248-2F)
STRN: TX-92/1248-2F
1. Roadside marketing--Texas. 2. Roads--Texas--Right of way--Multiple use. 3. Roadside improvement--Texas. 4. Direct selling--Texas.

11 APR 94 26340973 TLBAsc

ROADSIDE REST AREAS--TEXAS.

TE
178.8
.B97
P42
1992

Euritt, Mark A.
Feasibility of safety rest area commercialization in Texas / by Mark A. Euritt, Robert Harrison, Susan Grant. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
x, 60 p. : ill. ; 28 cm. -- (Research report ; 1268-1F)
STRN: 1268-1F
1. Roadside rest areas--Texas. 2. Privatization. 3. Roads--Right of way--Law and legislation--Texas.

23 MAR 94 28398434 TLBAsc

ROCKFILLS.

TA
770
.R32
G323
1993

Racin, James A.
Gabion facilities along the Pacific Coast Highway / James Anthony Racin. -- [Sacramento, Calif.] : California Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
iv, 53 p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-F93-17

1. Rockfills. 2. Roads--California--Embankments. 3. Retaining walls--California. 4. Wire netting--Corrosion.

23 MAR 94 29173502 TLBAsc

SCOUR AT BRIDGES--MEASUREMENT.

TG
320
.M54
P73
1992

Miller, Arthur C.
Predictive equations for bridge scour applicable to streams in Pennsylvania / Arthur C. Miller, Dennis Johnson, Richard Steinhart. -- University Park, Pa. : Environmental Resources Research Institute, The Pennsylvania State University. [Springfield, Va. : Available from the National Technical Information Service], 1992.
xix, 79 p. : ill. ; 28 cm.

1. Scour at bridges--Measurement. 2. Bridges--Pennsylvania--Foundations and piers.

08 APR 94 28816705 TLBAsc

SELF-ESTEEM.

A-V
BF
697.5
.S54
W54
1991

White, Julie.
The psychology of self-esteem [sound recording] : [how to reach your potential at work and at home] / by Julie White. -- Boulder, CO : CareerTrack Publications, p1991.
6 sound cassettes : analog. -- (An Audio cassette seminar)
CareerTrack Publications: 10113.
ISBN 1-55977-075-9

1. Self-esteem.

Rev-1 4-1-94 TLBAsc

SOIL STABILIZATION.

TA
710.5
.W54
Y37
1991

Williams, John A.
Yarn reinforced soil : report / prepared by John Williams. -- [Sacramento, Calif.] : California Dept. of Transportation, [Office of Transportation Laboratory ; Springfield, Va. : Available through the National Technical Information Service, 1991]
x, 70 p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-91/07

1. Soil stabilization. 2. Soil consolidation. 3. Yarn.

26 APR 94 27137848 TLBAac

STONE & WEBSTER, INC.--HISTORY.

TA
217
.S76
K44
1989

Keller, David Neal.
Stone & Webster, 1889-1989 : a century of integrity and service / by David Neal Keller. -- New York : Stone & Webster Inc., c1989.
ix, 373 p. : ill. (some col.) ; 24 cm.
ISBN 0-9623677-0-2

1. Stone & Webster, Inc.--History. 2. Engineering--United States--History.

26 APR 94 23815830 TLBAsc 89-62424

STRESS (PSYCHOLOGY)

A-V
BF
575
.S75
M36
1984

Managing stress [videorecording] / a Centron production. -- Northbrook, Ill. : Coronet Film & Video, c1984.
3 videocassettes (VHS) (40 min.) : sd., col. ; 1/2 in. + 1 discussion guide.

1. Stress (Psychology) 2. Job stress.

25 MAR 94 16717939 TLBAsc

SUCCESS.

A-V
BF
637
.S8
W34
1992

Waitley, Denis.
Denis Waitley live on winning [sound recording] : powerful strategies for reaching your potential. -- Boulder, CO : CareerTrack Publications, 1992, p1987.
6 sound cassettes : analog.
CareerTrack Publications: 10114.
ISBN 1-55977-078-3

1. Success. 2. Self-actualization (Psychology)

01 APR 94 25342640 TLBAsc

TELECOMMUTING--UNITED STATES.

HD
2333
.F63
O53
1989

Fleming, Lie.
The one-minute commuter : how to keep your job and stay at home telecommuting / Lie Fleming. -- Rev. -- Davis, CA : Fleming, LTD, 1989, c1988.
103 p. : ill. ; 22 cm.
ISBN 1-877887-14-5

1. Telecommuting--United States.

15 APR 94 20938977 TLBAsc 90-151046

TIRES, RUBBER--RECYCLING.

TE
200
.H83
S27
1993

Hughes, Charles S.
Scrap tire utilization technologies / prepared by Charles S. Hughes ; sponsored by National Asphalt Pavement Association and State Asphalt Pavement Association Executives. -- Lanham, MD : National Asphalt Pavement Association, c1993.
ii, 29 p. : ill. ; 28 cm. -- (Information series ; 116)

1. Tires, Rubber--Recycling. 2. Rubber, Reclaimed. 3. Waste products as fuel. 4. Waste products as road materials.

30 MAR 94 29687089 TLBAsc

TOLL ROADS.

HE
336
.C64
P66
1993

Poole, Robert W.
Congestion relief toll tunnels / Robert W. Poole and Yuzo Sugimoto. -- Los Angeles : Reason Foundation (3415 S. Sepulveda Blvd., Los Angeles, CA 90034), 1993]
30 p. : ill. ; 28 cm.

1. Toll roads. 2. Express highways. 3. Traffic congestion.

26 APR 94 29918282 TLBAsc

TOTAL QUALITY MANAGEMENT IN GOVERNMENT.

JK
468
.T65
A35
1992

United States. General Accounting Office.
Quality management : survey of federal organizations : briefing report to the Honorable Donald Ritter, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office, [1992]
67 p. : ill. ; 28 cm. -- (GAO briefing report ; GGD-93-9BR)

1. Total quality management in government. 2. Administrative agencies--United States--Management.

01 APR 94 26996122 TLBAsc

TRAFFIC CONGESTION--PREVENTION--CONGRESSES.

HE
336
.C64
E96
1991

Exploring the role of pricing as a congestion management tool : summary of proceedings : Seminar on the Application of Pricing Principles to Congestion Management. -- [Washington, D.C.] : Federal Highway Administration, [1991]
ix, 18 p. ; 28 cm. -- (Searching for solutions. A policy discussion series ; no. 1)

1. Traffic congestion--Prevention--Congresses. 2. Toll roads--Government policy--United States--Congresses. 3. User charges--Congresses.

26 APR 94 27243209 TLBAsc

TRAFFIC CONGESTION--UNITED STATES.

HE
336
.C64
U54
1992

United States. General Accounting Office.
Traffic congestion : activities to reduce travel demand and air pollution are not widely implemented : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992]
88 p. : charts ; 28 cm.

1. Traffic congestion--United States. 2. Air--Pollution--United States. 3. Urban transportation--United States--Planning.

22 APR 94 27126807 TLBAsc

TRAFFIC CONGESTION--UNITED STATES--CONGRESSES.

HE
336
.C64
E65
1992

Examining congestion pricing implementation issues : summary of proceedings, Congestion Pricing Symposium, June 10-12, 1992. -- Washington, D.C. : Federal Highway Administration, [1992]
xiii, 43, A-7, B-2 p. ; 28 cm. -- (Searching for solutions. A policy discussion series ; no. 6)

1. Traffic congestion--United States--Congresses. 2. Toll roads--United States--Congresses. 3. Roads--United States--Finance--Congresses.

28 APR 94 27311191 TLBAsc

TRAFFIC NOISE.

TD
892
.H5
H47
1993

Herman, Lloyd.
Noise mitigation strategies / by Lloyd Herman, William Bowlby ; prepared for Washington State Transportation Commission, Department of Transportation. -- [Olympia, Wash. : Washington State Dept. of Transportation ; Springfield, VA : Available through the National Technical Information Service, 1993]
36 p. in various pagings ; 28 cm.
STRN: WA-RD 327.1

1. Traffic noise. 2. Noise control. 3. Traffic noise--Prevention.

11 APR 94 29530923 TLBAac

TRAFFIC REGULATIONS.

HV
8079.5
.F57
1991

Fitzpatrick, Kay.
A review of automated enforcement / by Kay Fitzpatrick ; prepared for the Texas Department of Transportation. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
ix, 51, A-8 p. : ill. ; 28 cm. -- (Research report ; 1232-5)
STRN: FHWA/TX-92/1232-5

1. Traffic regulations. 2. Law enforcement--Automation. 3. Radar in speed limit enforcement.

05 APR 94 27766086 TLBAac

TRAFFIC SAFETY--RESEARCH.

HE
5614.2
.P67
1994

Potential safety applications of advanced technology / P. Fancher ... [et al.]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
xii, 310 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-080

1. Traffic safety--Research. 2. Traffic safety--Technological innovations. 3. Roads--Safety measures. 4. Intelligent Vehicle Highway Systems.

15 APR 94 29825784 TLBAac

TRAFFIC SIGNS AND SIGNALS.

TE
228.3
.D82
G842
1992

Dudek, Conrad L.
Guidelines on the selection and design of messages for changeable message signs / by Conrad L. Dudek ; sponsored by Texas Department of Transportation in conperation with U.S. Department of Transportation, Federal Highway Administration. -- Rev. Nov. 1992. -- College Station, Tex. : Texas Transportation Institute, the Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 63 p. : ill. ; 28 cm. -- (Research report ; 1232-10)
STRN: FHWA/TX-92/1232-10

1. Traffic signs and signals. 2. Express highways--Communication systems.

23 MAR 94 27292349 TLBAac

TRAFFIC SIGNS AND SIGNALS.

TE
228
.P36
M56
1993

Paniati, J. F.
Minimum retroreflectivity requirements for traffic signs / [J.F. Paniati, D.J. Mace]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
v, 67 p. ; 28 cm.
STRN: FHWA-RD-93-077

1. Traffic signs and signals. 2. Reflectors (Safety devices) 3. Visibility.

30 MAR 94 29248998 TLBAac

TRANSPORTATION--NORTHEASTERN STATES--PLANNING.

HE
207
.N67
1991

Northeast Association of State Highway and Transportation Officials. Task Force on Transportation Demand Management.
Transportation demand management in the Northeast / prepared by The Northeast Association of State Highway and Transportation Officials (NASHTO) Task Force on Transportation Demand Management. -- [Burlington, VT] : NASHTO, [1991]
2 v. ; 28 cm.

1. Transportation--Northeastern States--Planning.

22 APR 94 27275165 TLBAac

UNITED STATES--STATES--STATISTICS--PERIODICALS.

REF.
HA
203
.A5

Almanac of the 50 states. -- 1985 ed.- . -- Burlington, VT : Information Publications, c1985-
v. ; 22 cm.
Annual.
ISSN 0887-0519 = Almanac of the 50 states

1. United States--States--Statistics --Periodicals. 2. State governments--Statistics--Periodicals.

15 APR 94 12181378 TLBAac 86-644000

WALKING--UNITED STATES.

A-V
GV
502
.W34
1986

Walk America [videorecording] / the Rockport Company. -- Dedham, Mass. : Videocom, 1986.
1 videocassette (VHS) (29 min.) : sd., col. ; 1/2 in.

1. Physical fitness. 2. Walking--United States. 3. Exercise. 4. Sweetgall, Rob.

25 MAR 94 18404720 TLBAac

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 APRIL 1994

NEWS

AIRPORTS
Pushback safety under scrutiny; In brief; passenger traffic figures; diary 3

Letters 4

INDUSTRY
Industry contracts, share prices 6

ATC
Satellites take further steps to global service; ATC contracts 7

NEW PRODUCT REVIEW
A round-up of new equipment on display at the ATC'94 exhibition in Maastricht in February 8

AIRPORTS

ENVIRONMENT
Runway de-icer revolution gathers pace 14

Waste water measures 17

DENVER
Another twist in the rocky road to Denver start-up 19

FAR EAST
Vietnam re-connects.. 21

DISABLED ACCESS
The search for harmony 23

GROUND VEHICLES
Lower costly overhauls 26

Front cover: Munich airport sends a frogman down to check for contaminants in the underground water run-offs, meanwhile many airports are looking to install turnkey monitoring systems. *See environmental section, pages 14-17*

ATC

FAR EAST
Far East planners seek to avoid congestion 28

WORKSTATIONS
Paper strips go down fighting 31

INTERVIEW

MANAGING DIRECTOR, WESTINGHOUSE (EUROPE)
John Guttendge 32

NEXT MONTH

The May issue will include the following features:

- **Environmental control:** Do apron vehicles create more air pollution than aircraft? We look at the origins of airport pollution
- **European regional airports:** With traffic booming at European regionals, we examine how they are benefitting from liberalisation of air services
- **Ground power units:** A look at the competing technologies alongside a cost benefit analysis between frequency converters, mobile GPUs, and centralised systems
- **Consultants:** The role of consultants in airport design and management.
- **Los Angeles:** A report on whether radical new funding policies at LAX heralds a new age in US airport financing
- **ATC civil and military coordination:** We look at new airspace management techniques and how military systems are finding increasing markets in the civil sector

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 MARCH 1994

NEWS

AIRPORTS
Interest in Belfast sale intensifies; Europe to plan new air strategy; diary dates 2

Passenger traffic figures, letters; news 3

INDUSTRY
Sepang project in doubt as Malaysia cuts UK links; In brief; industry share prices 5

Industry contracts 6

ATC
Europe reschedules integration; ATC '94 award presentation 8

ATC contracts 9

AIRPORTS

ISRAEL
Building for peace 12

LONDON
European rivals target London's hub traffic 14

APRON VEHICLES
Airlines drive for greater ground fleet efficiency 19

ATC

ATC'94 CONFERENCE REPORT
Satellite divisions persist 23

Front cover: Automation in runway and taxiway lighting is a growing trend. The US is increasing its efforts in this area to conform to ICAO's standards for low visibility flying and reduced operation and maintenance costs. *See story page 24*

LIGHTS
Changing light controls 24

METEOROLOGY
Vortex studies closing the gap 27

BIRD STRIKES
The conflict of wings 29

BUYER'S GUIDE

A Buyer's Guide to Security Equipment 30

INTERVIEW

SENIOR DIRECTOR OPERATIONS, EUROCONTROL
Wolfgang Philipp 32

NEXT MONTH

The April issue will include the following features:

- **Access for the disabled:** *Jane's Airport Review* is conducting a survey of terminal/aircraft access facilities at Europe's busiest airports
- **Vietnam:** Now that the US embargo has been lifted, we examine the country's programme to develop a new generation of airports
- **De-icing:** A look at how de-icing products and services are being applied without causing huge clean-up bills for environmental damage
- **Controller workstations:** A comparison between the new generation of workstations going into operation worldwide
- **ATC'94 exhibition:** A round-up of some of the innovations on display at the ATC'94 exhibition at Maastricht.

ADMINISTRATIVE LAW REVIEW
CONTENTS

Spring 1994, Volume 46, Number 2

Working Papers as Federal Records
The Need for New Legislation to Preserve the History of National Policy
Philip G. Schrag 95

Apotheosis of Mediocrity"?—The Rehnquist Court and Administrative Law
Bernard Schwartz 141

Social Security Appeals in Great Britain
Nicholas J. Wikeley 183

Delegation of Legislative Power to Agencies
A Comparative Analysis of United States and German Law
Uwe Kischel 213

Institute of Transportation Engineers

ITE JOURNAL

Volume 64, Number 3
March 1994

Contents

Articles

12 International President's Letter
By Marsha D. Anderson

14 Evaluation of Natural Gas as an Alternative Fuel in the Transit Industry
By Massoum Moussavi and Motasem Al-Turk
To maintain the balance between transportation and the environment, natural gas must be evaluated as an alternative fuel in the transportation industry.

20 Survey of Low-Volume Urban Streets and Rural Roads
By H. Allen Swanson
The author summarizes the findings of a survey developed and distributed to transportation professionals worldwide.

23 Monitoring Freeway Traffic Conditions with Automatic Vehicle Identification Systems
By Steve Z. Levine and William R. McCasland
As part of the urban freeway system in Houston, Texas, an automatic vehicle identification system has been implemented to monitor traffic conditions.

31 Bicycle Traffic Flow Characteristics: Experimental Results and Comparisons
By Francis P.D. Navin
A series of experimental studies begun in 1974 was completed nearly two decades later as part of a broader range of work dealing with road safety issues.

38 The Resurgence of Commuter Rail
By L. David Shen and Jeffrey G. Mora
Commuter rail service has become an increasingly attractive alternative for transportation planners.

46 An Informational Report: Traffic Engineering for Neo-Traditional Neighborhoods
By ITE Technical Council Committee 5P-8
As a first step towards developing guidelines and identifying further areas for research, this report explores the new trend in planning neighborhoods with mixed land uses.

News

6 ITE News
Exhibit Opportunities in China • New Compendium Available

8 Washington Report
Clinton Budget • ISTEA Planning Regulations Briefing • Management System Rulemaking

10 Nominating Committee Announcement

Departments

4 Calendar

7 To the Editor

47 People and the Profession

48 Research Bulletin

49 Professional Services Directory

55 Advertisers Index

56 Positions

On the cover: Rocky Mountain National Park, Colo. Photo by Norma Watts

Institute of Transportation Engineers

ITE JOURNAL

Volume 64, Number 4
April 1994

Contents

Articles

11 Get to Know the Vice President Candidates

12 Interagency Communication: A Vital Element in the Dallas Multijurisdictional Environment
By James D. Carvell, Edward J. Seymour, Richard L. Peterson and George Human
Engineers and planners in the Dallas Urban Area are interacting to meet the urban transportation problems. This is the first in a series of articles about Dallas, Texas, the host city of the 64th ITE Annual Meeting.

18 A Computer-Aided Project Management System for Transportation Consultants
By Kim Eric Hazarvartian and John Collura
The article focuses on the conceptual prototype of a small computer-aided system for transportation consultants.

26 An Equipment Standard: Portable Bulb-Type Changeable Message Signs for Highway Work Zones
By ITE Technical Council Committee 7S-3
The purpose of this standard is to provide a guide for the preparation of specifications for portable bulb-type changeable message signs.

28 A Verkehrsberuhigung Design for an American Road
By Kopl Halperin and Robert Huston
The authors present a design using American road elements to introduce "traffic calming" and greater safety on traditional roads.

36 Operational Evidence of Changing Travel Patterns: A Case Study
By David M. Levinson and Ajay Kumar
Based on data collected in Montgomery County, Maryland, this research sheds fresh light on changes in traffic patterns.

41 Monitoring the Glass Bead Dispensing Rate for Highway Striping Vehicles
By Kanoksak Eamopas, Naiqian Zhang and Mark D. Schrock
Using optical sensors, road-striping operators can detect any malfunction and adjust the flow rate of glass beads during dispensing.

News

8 ITE News
Shanghai Expo

9 Washington Report
Traffic Improvements as Important CMAQ Element • Public Concerns Over Metric Conversion • Expansion of Highway Safety Program Guidelines

Departments

4 Calendar

47 Elections to the Grade of Fellow

48 People and the Profession

49 Professional Services Directory

56 Positions

62 Advertisers Index

On the cover: The Mustangs of Las Colinas fountain in Dallas, Texas. Dallas is host of the 64th ITE Annual Meeting.

The Journal of Air Law and Commerce

VOLUME 59 FEB.-MAR. 1994 NUMBER 3

TABLE OF CONTENTS

SPECIAL CONSIDERATIONS IN MILITARY FLYING CLUB LITIGATION ..... *Robert J. Gross* 561

WARSAW'S WINGSPAN OVER STATE LAWS: TOWARDS A STREAMLINED SYSTEM OF RECOVERY ..... *Luis F. Ras* 587

. . . OR WOULD YOU RATHER HAVE WHAT'S BEHIND DOOR NUMBER TWO? UNIFORM CHOICE OF LAW PROPOSALS: BIG DEAL OF THE DAY OR JUST ANOTHER ZONK? ..... *Robert J. Witte* 617

COMMENTS

HOW TO RESTORE THE AIRLINE INDUSTRY TO ITS FULL UPRIGHT POSITION: AN ANALYSIS OF THE NATIONAL COMMISSION TO ENSURE A STRONG, COMPETITIVE AIRLINE INDUSTRY REPORT ..... *Amy K. Bock* 663

NEPA: BUSINESS AS USUAL: THE WEAKNESSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT ..... *Clay Hartmann* 709

CERTIFICATION OF UNFIT PILOTS: IS THE UNITED STATES FLYING BLIND? ..... *Vicki L. Minter* 763

Journal of

Structural Engineering

Volume 120 Number 4 April 1994

TECHNICAL PAPERS

Numerical Modeling of Tensile Crack Propagation in Concrete Dams.
Ram Kumar and G. C. Nayak 1053

Nonlinear Vibration Analysis of Steel Frames with Semirigid Connections.
Siu Lai Chan and Goman Wai Ming Ho 1075

Buckling Behavior of Square-and-Diagonal Double-Layer Grid
Toshitsugu Saka and Yoshiya Taniguchi 1088

Fire Resistance of Fire-Resistant Steel Columns.
Y. Sakumoto, T. Yamaguchi, T. Okada, M. Yoshida, S. Tasaka, and H. Saito 1103

Fatigue of Prestressed Concrete Beams with Inclined Strands
John F. Muller and Peter F. Dux 1122

Elastic Critical Loads for Plane Frames by Transfer Matrix Method
Stavros Syngellakis and Esmat S. Kameshki 1140

Torsional Response of Unsymmetric Buildings to Incoherent Ground Motions
G. D. Hahn and X. Liu 1158

Behavior of Reinforced High-Strength–Concrete Corbels
Yook-Kong Yong and P. Balaguru 1182

Nonlinear Finite Element Analysis of Concrete Deep Beams.
A. Fafitis and Y. H. Won 1202

Simple Method for Approximate Analysis of Framed Tube Structures.
A. K. H. Kwan 1221

Viscous Damping in Inelastic Structural Response.
Dionisio Bernal 1240

Application of NLFM Models to Predict Cracking in Concrete Gravity Dams.
Sudip S. Bhattacharjee and Pierre Léger 1255

K-Factor for Columns in any Type of Construction: Nonparadoxical Approach.
J. Dario Aristizabal-Ochoa 1272

Semiactive Motion Control Using Variable Stiffness
David C. Nemir, Yingjie Lin, and Roberto A. Osegueda 1291

Instantaneous Optimal Control of Building Frames.
C. C. Chang and Henry T. Y. Yang 1307

Investigation of Performance of Bridge Abutments in Seismic Regions.
Raj Siddharthan, Mahmoud El-Gamal, and Emanuel A. Maragakis 1327

Influence of Membrane Forces on Transverse-Shear Reinforcement Design.
Perry Adebar and Weishi He 1347

DISCUSSION

Reinforced Concrete Beams with Plates Glued to their Soffits. Deric John Oehlers.
By Gilbert H. Béguin. Closure by author 1368

ERRATA 1373

Journal of
Transportation Engineering

Volume 120 Number 2 March/April 1994

TECHNICAL PAPERS

Interface Shear Stress in Overlaid Concrete Pavements.
C. M. Lau, T. F. Fwa, and P. Paramasivam 163

Reliability Assessment of Continuously Reinforced Concrete Pavements.
Angela J. Weissmann, B. Frank McCullough, and W. Ronald Hudson 178

Compacted High-Gravel-Content Subgrade Materials
William N. Houston, Sandra L. Houston, and Kenneth D. Walsh 193

New Crack-Imaging Procedure Using Spatial Autocorrelation Function.
H. Lee and H. Oshima 206

Evaluating Roadside Hazards Using Computer-Simulation Model
Paul deLeur, Walid Abdelwahab, and Francis Navin 229

Level-of-Service Analysis of Toll Plazas on Freeway Main Lines
Feng-Bor Lin and Cheng-Wei Su 246

Human Factors Design Considerations for Variable Message Freeway Signs.
Jeffrey Dale Armstrong and Jonathan E. Upchurch 264

Characteristics of Trips by Foot and Bicycle Modes in Indian City.
V. Thamizh Arasan, V. R. Rengaraju, and K. V. Krishna Rao 283

Heuristic Algorithms for Aggregating Rail-Surface-Defect Data.
Roemer M. Alfelor and Sue McNeil 295

Effect of Temperature Changes on Water-Main Breaks.
Ahmad Habibian 312

Severity Measures in Side-Impacts with Narrow Roadside Structures.
M. H. Ray, J. F. Carney III, M. I. Faramawi, and L. A. Troxel 322

Journal of
Urban Planning and Development

Volume 120 Number 1 March 1994

TECHNICAL PAPERS

Infrastructure Management: U.S and Japanese Systems Contrasted.
Neil S. Grigg 1

Heuristic Algorithm to Locate Solid-Waste Disposal Site.
Narayanaswamy V. Ramu and William J. Kennedy 14

Land Development Regulations: Roadblock to Affordable Housing.
Thomas J. Olenik and S. L. Cheng 22

Evaluating Ride-Sharing Programs: Massachusetts' Experience.
John Collura 28

Redesigning Suburbia for Walking and Transit: Emerging Concepts.
Farhad Atash 48

MBE
Minority • Business • Enterprise
Volume 11, Number 2
March/April 1994

6 **Road Warrior**—Educator-turned-computer technology entrepreneur Richard T. Cheng gets ready for his next big challenge: the information superhighway.

22 **Different Drummers**—Success for these entrepreneurs comes in a wet suit, lower long-distance rates, a desert casino resort, and point-of-purchase displays.

32 **At the Junction**—The information superhighway will change the way we work and live. Minority business owners who don't get on now might find themselves stranded down the road.

42 **Boon—or Boondoggle?**—Is it hype, or will the information superhighway open up a whole new universe of business opportunities?

48 **Information Overdrive**—The information superhighway will take you directly to your most receptive audience. But will they be listening?

54 **Enlightened Interest**—Its minority supplier program is key to an electric utility's own long-term viability.

58 **Models of Success**—The second annual Small and Emerging Business Owners Conference in Cincinnati showcases new information technologies.

PARKING
THE MAGAZINE OF THE PARKING INDUSTRY

March 1994
Vol. 33, No. 3

FEATURES

23 **REVENUE CONTROL**

24 **Modernizing Revenue Control**
Marvin Marx
Several of San Francisco's city-run garages are converting to pay-on-foot

30 **Revenue Control and the People Who Cheat**
Larry Donoghue
Weaponry for plugging leaks and for selecting the right controls



34 **Valet Parking and Automation**
Bernard Shapiro
Automated revenue control for valet parking

38 **Industry Profile: Roy Carter**
Lou Cook
A man who knows how to get the best out of life

PARKING
THE MAGAZINE OF THE PARKING INDUSTRY

April 1994
Vol. 33, No. 4

FEATURES

20 **GINP: Making Student Parkers Feel Safe**
Mary Hovind and Mike Ramolae
The University of Minnesota has put together a number of security measures to assure student safety

23 **INDUSTRY FORUM: Emphasizing Top-Notch Customer Service** *Genilee Swope Parente*
Roy McCormick and Marc Slavin talk about providing quality service

27 **The Challenge of Safe Lighting** *James P Nelson*
Parking facilities face their own special problems and solutions in their efforts to provide the best lighting

31 **What's in a Bulb?** *William O West*
Facility owner/operators don't need to be lighting experts, but they should know the basics of available lighting alternatives

35 **CNN Center Lighting Retrofit** *Charles R. Munn*
The headquarters of Ted Turner's media conglomerate faced a huge project when it decided it needed better, safer lighting for its garage

38 **Parking Control: Making It Safe** *J. Pierre Koudelka*
Safety at entrances and exits should extend to motorcycles, bicycles and pedestrians

42 **Employee Injuries Carry a Huge Price Tag**
Rich Parker
Employers can reduce costs through aggressive safety programs

45 **INDUSTRY PROFILE: Richard Puccinelli** *Lou Cook*
He's headed the family and its business for many years

Railway Age

March 1994

35 The Competitors: Union Pacific

35 How UP is closing the capacity gap
38 Dick Davidson on "seamless, interline, quality transportation."
42 Maintenance-of-way: Managing a high-capacity infrastructure.
44 Mechanical: Moving ahead to the next technological plateau.
48 C&S: Preventing failure by predicting it.
53 Purchasing and materials management: Fueling the drive to zero defects and greater reliability.

55 For train crews, a "Chicago Bible"

Locomotive engineers now have a useful guide to Chicago's railroad maze.

57 Chicago's Metra commuter rail

Why the Second City's commuter trains are second to none.

67 Why TTC opted for trainscreens

Platform-edge doors offer added comfort and safety for rail transit travelers.

22 Rail Update

SP, WC test two-way service; EXPO-RAIL 94; 6,000-hp locomotives; Pan-American conference; CN and CP's eastern merger; The Supply Side.

31 Transit Update

The L.A. earthquake. More riders, more dollars; MK opens California railcar plant; MetroLink ridership exceeds projections; In Transit.

Railway Age

April 1994

33 "Truckers are some of our best customers"

Rail/truck partnerships are playing a key role in the rapid growth of intermodal.

45 A clear track for double-stack

A public/private partnership brings Pennsylvania into the double-stack network.

51 A sand-breathing diesel conquers the Sahara

Hauling 23,000 tons of iron ore across the desert requires a special locomotive.

57 Despite setbacks, high speed rail moves ahead

The "incremental approach" may be the best hope for high speed rail.

71 Enforcement up; collisions down

Photo enforcement is helping reduce LRV/auto collisions on L.A.'s Blue Line.

18 Rail Update

Jake Jacobson accepts Railroader of the Year; Remembering John Riley. UP orders a.c. locomotives; BN pulls out of Texas; The Supply Side.

28 Transit Update

Another record capital spending plan for New Jersey Transit; In Transit: APTA releases funding study. MBTA expands; LACMTA cuts back.

Vol. 35 No. 3 March 1994 ISSN 0041-0683

Traffic Engineering + Control

Managing Editor
Keith Lumley
Advertisement Director
Michael Stoneham
Production Secretary
Janet Orna

Editorial Consultants
Professor R E Allsop *Research*
F E K Britton *Paratransit*
J D G F Howe *Developing countries*
K W Huddart *Road safety*
D Bayliss *Public transport*

Editorial Advisory Board
A P de Boer
R J Bridle
Professor Sir Colin Buchanan
Thomas B Deen
J A Gaffney
Aura Ishido
J Kienhout
Dr M G Lay
Professor Dr-Ing W Leutzbach
Brian V Martin
Professor Adolf D May
Maurice Meine
Alec Severhead
Kenneth Summerfield
Professor Celestino Trani
Professor T E H Williams

142 The safety of roundabouts in The Netherlands
C Schoon and J van Minnen

149 Stuttgart Transport Operation by Regional Management
The STORM Project
J Holzwarth, H Thyes and H Zackor

158 The valuation of road traffic accident injuries
D O'Reilly

164 Automatic Debiting and Electronic Payment for Transport —
The ADEPT Project
2 Field-trials of automatic debiting in Sweden
J Hedin and J Sundberg

173 Transport research at the University of Leeds
Report for 1993
H R Kirby

155 Parking
164 Industrial News Intertraffic 94 Exhibition Preview
183 News
211 Buyers' Guide
221 Classified Advertisements
231 Index to Advertisers
232 Coming Events

Vol. 35 No. 4 April 1994 ISSN 0041-0683

Traffic Engineering + Control

Managing Editor
Keith Lumley
Advertisement Director
Michael Stoneham
Production Secretary
Janet Orna

Editorial Consultants
Professor R E Allsop *Research*
F E K Britton *Paratransit*
J D G F Howe *Developing countries*
K W Huddart *Road safety*
D Bayliss *Public transport*

Editorial Advisory Board
A P de Boer
R J Bridle
Professor Sir Colin Buchanan
Thomas B Deen
J A Gaffney
Aura Ishido
J Kienhout
Dr M G Lay
Professor Dr-Ing W Leutzbach
Brian V Martin
Professor Adolf D May
Maurice Meine
Alec Severhead
Kenneth Summerfield
Professor Celestino Trani
Professor T E H Williams

236 LINSIG II The next generation –
A computer program to aid traffic signal design and assessment
B F Simmonite

245 AutoCounts A way to analyse automatic traffic count data
B Ramsey and G Hayden

250 Weekend cars
J Yee and A P G Menon

253 ATT – What's in a name?
J Cheese

256 Automatic Debiting and Electronic Payment for Transport –
The ADEPT Project
3 Congestion Metering The Cambridge trial
D J Clark, P T Blythe, N Thorpe and A Rourke

264 Transport Operations Research Group University of Newcastle upon Tyne
Progress Report 1993/1994
M G H Bell

242 Letters to the Editor
247 Parking
270 Transport courses run by members of the Universities Transport Study Group
272 News
278 Industrial News
284 Buyers' Guide
296 Coming Events

The Urban Lawyer

Contents

SILVER ANNIVERSARY SYMPOSIUM—A CRITIQUE OF THE CLINTON ADMINISTRATION'S URBAN INITIATIVES AND REFLECTIONS OF TWENTY-FIVE YEARS OF NATIONAL URBAN POLICY

PART I: CRITIQUE OF THE CLINTON ADMINISTRATION'S URBAN INITIATIVES

3 Introduction: Celebrating *The Urban Lawyer*'s Silver Anniversary
DAVID W. BUSHEK
JENNIFER H. GEARY

11 The Impact of NAFTA on the U.S./Mexico Border Environment
BUCK J. WYNNE

31 The Environmental Implications of NAFTA: A Canadian Perspective
MICHAEL I. JEFFERY

51 National Performance Review: A Renewed Commitment to Strengthening the Intergovernmental Partnership
PATRICIA E. SALKIN

63 Some Historical Lessons for Implementing the Clinton Administration's Empowerment Zones and Enterprise Communities Program: Experiences from the Model Cities Program
OTTO J. HETZEL

83 The Family Medical Leave Act: An Overview and Analysis
ADRIANE J. DUDLEY
NANCY E. DESIMONE

99 The President and the Cities: Clinton's Urban Aid Agenda
DUANE A. MARTIN

143 Health-Care Reform and the Nonprofit Hospital: Is Tax-Exempt Status Still Warranted?
CHARLES B. GILBERT

177 CASES, STATUTES, AND RECENT DEVELOPMENTS

Environmental Regulation • 177
Hospitals • 178
Employee Drug Testing • 178

181 BOOKS OF NOTE

Minority Representation and the Quest For Voting Equality

TRANSPORTATION PRACTITIONERS JOURNAL

Vol. 61 Spring No. 3

Transportation Practitioners Journal Board of Editors 258
Executive Committee 259
Vice Presidents by District 260
ATP National Committees 261
Chapter Activities 272
Editorial Policy/Manuscript Submissions 276
John Louis Bagileo - In Memoriam 277
Administrative Deregulation of the Railroads — Richard D. Stone 278
Spill Response Planning — All Modes of Transportation Feel the Impact of the Oil Pollution Act of 1990 — Pamela J Garvie and Susan B. Geiger 289
Analyzing the U.S. Domestic Airline Industry — Part III: A Model for Airline Mergers — L. Milton Glisson and Michael K. Jones 307
Motor Carrier Liability for Accidents Involving Lease Trucks and Drivers: Can You Avoid It? — Donald L. Miller, II 320
Aviation 331
Court Decisions 334
Department of Transportation 337
Federal Energy Regulatory Commission 343
Intrastate Regulation 345
Labor 350
Motor Transportation 354
Organization, Practice and Procedure 358
Rail Transportation 359
Safety and Hazardous Materials Transportation 363
Water Transportation 365
Fabulae Animus Sunt 373
Qualifications for Membership 378
Application for Membership 379
Publications Available at Association Headquarters 381
Order Form for Publications 383
Deceased 336
Correction 275
Application for Advertising Space 384

TUNNELS & TUNNELLING
MIDDLE EAST ISSUE, SPRING 1994

Comment 5

World News 7, 8, 9, 11, 12

Pumped storage scheme in the emperors' graveyard 14
CHINA *Peter Darling, The Editor, brings us this report on the Ming Tombs Pumped Storage project north of Beijing where unexpected ground caused serious problems, including the collapse of a penstock tunnel*

Grizzly project completed against the odds 21
UNITED STATES *Technical Journalist Tim Aven describes the construction of a hydro scheme in the Sierra Nevada mountains in California, with special attention to the mapping techniques used.*

The multi-faceted use of robots in sewer repairs 28
REHABILITATION *Robotic systems are flexible tools in sewer repair, alone or in combination with other methods. D J Green of Master Builders Technologies, Zurich describes their many advantages.*

Letters to the Editor 33

Planning and engineering of the Heathrow Express 35
BRITISH TUNNELLING SOCIETY *The meeting at the Institution of Civil Engineers on Novemeber 18 1993 addressed the methods envisaged for construction of the dedicated rail link, long overdue, between London's main airport and Paddington Station in central London. Speakers were: David Williams, Projects Director, BAA Alan Finch, Design Manager and Associate, and Tony Deane, Associate, Mott MacDonald, with Dr Ing Gerhard Sauer of Salzburg*

Cairo to host 20th ITA tunnelling show 39
ITA PREVIEW *Peter Darling, The Editor, presents a preview of the 20th Annual Assembly of the International Tunnelling Association, to be held in the Egyptian capital from April 2 to 7, together with its associated activities*

Obituary 43

What is happening at the sharp end? 45
SOUND & IMAGE UNDERGROUND *Development in audio-visual communication underground are helping to advance the industry. Technical Journalist Derrick Jolley files this report*

Business & Finance 49

Contracts & Orders 50

Products & Services 55

Dates & Events 58

TUNNELS & TUNNELLING
MARCH 1994 VOL 26 NO 3

Comment 5

Microtunnelling chosen for sewer replacement 7
KUWAIT *The Iraqi occupation interrupted remedial work on Kuwait's sewers. This delay, coupled with the extremely acidic underground environment and a high pH of sewage, has caused the sewers to deteriorate beyond redemption. Peter Darling, The Editor, visited Kuwait City and brings us this report on the work in progress*

Stations and tunnels on the Cairo Metro 12
EGYPT *After successful completion of Line 1, Line 2 of the Cairo Metro will be constructed in two phases. This report comes from Anthony Burchell, FICE, Deputy Construction Manager, and Donald Richards, PE Senior Professional Associate, Chief Geotechnical Engineer, Parsons Brinckerhoff International, Cairo*

Road tunnels support agricultural survival 17
TURKEY *Peter Darling, The Editor, visited the Southeastern Anatolia Hydroelectric and Irrigation Project, where tunnels through the Mudlah Range will help in the distribution of agricultural produce from the rejuvenated Upper Mesopotamia region*

Tunnelling in chalk marl for the Dhiarizos diversion tunnel 22
CYPRUS *The route and construction of a 14.5km tunnel are considered by J C Sharp, Geo-Engineering, Jersey, S C Bandis, Aristotelian University, Thessaloniki, C Kndiotis and E Christodoulou, Water Development Department, Nicosia*

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

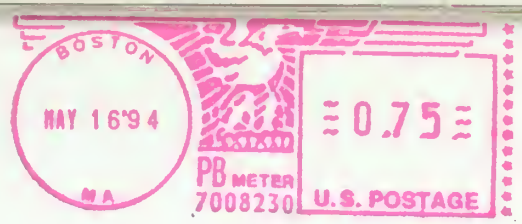
Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116



Leonard Adams-Gov. Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS. STL1.3:1994/no.3

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISTIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

GOVERNMENT DOCUMENTS
COLLECTION

SEP 01 1994

University of Massachusetts
Depository Copy

May • June • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

ASPHALT CONCRETE—TESTING.

TE
270
.S37
I58
1992

Scrimsher, Thomas.
An investigation of AC pavement distress on Interstate 15 from Cajon Pass to the Nevada State line : final report no. CA/TL-92/06, Caltrans study 6433.94 / performed by Office of Pavement ; report prepared by Thomas Scrimsher, Robert N. Doty. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1992]
91 p. in various pagings : ill. ; 28 cm.
STRN: CA/TL -92/06

27872767 TLBAsc SEE NEXT CRD

ASPHALT EMULSION MIXTURES—TESTING.

TE
270
.H37
E56
1987

Hargett, Katherine H.
Experimental hot mix project using polymerized asphalt / by Katherine H. Hargett. -- Austin : Texas Dept. of Transportation, [1987].
v, 44 p. : ill. ; 28 cm. -- (Research report ; DHT-6)

1. Asphalt emulsion mixtures--Testing. 2. Binders (Materials) 3. Pavements--Texas--Testing.

28229069 TLBAsc

AUTOMOBILE DRIVERS--PSYCHOLOGY.

HE
336
.T7
B46
1992

Beno, John A.
An observational study of driver selection of gaps at intersections in urban areas / by John A. Beno. -- Washington, D.C. : AAA Foundation for Traffic Safety, [1992]
i, 37 p. ; 28 cm.

1. Traffic flow. 2. Automobile drivers--Psychology. 3. Roads--Interchanges and intersections.

26573173 TLBAsc

AUTOMOBILE SUPPLIES INDUSTRY—UNITED STATES.

HD
9710.3
.M46
J36
1991

Mendelowitz, Allan I.
Japanese-affiliated automakers : management practices related to purchasing parts : statement of Allan I. Mendelowitz, director, International Trade, Energy, and Finance Issues, National Security and International Affairs Division, before the Committee on Small Business, House of Representatives / United States General Accounting Office. -- [Washington, D.C.] : The Office ; [Gaithersburg, MD] (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1991]
15 p. ; 28 cm. -- (Testimony ; GAO/T-NSIAD-92-5)

27580241 TLBAsc SEE NEXT CRD

AUTOMOBILES--SEAT BELTS.

TL
242
.I54
1992

Injury patterns of seat belted patients admitted to a trauma center / Dean Hess ... [et al.] (Dept. of Trauma Services and Dept. of Research, York Hospital). -- Washington, D.C. : AAA Foundation for Traffic Safety, [1992]
iii, 30 p. : ill. ; 28 cm.

1. Automobiles--Pennsylvania—Seat belts. 2. Traffic accidents--Pennsylvania. 3. Hospitals--Pennsylvania—Emergency service. 4. Automobiles--Seat belts.

27064033 TLBAsc

BRIDGES, BOX GIRDER--TESTING.

TG
362
.R92
F73
1992

Ryals, K. K.
Fretting fatigue in external post-tensioned tendons / by K.K. Ryals, J.E. Breen, M.E. Kreger ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xvii, 84 p. : ill. ; 28 cm. -- (Research report ; 1211-1F)
STRN: FHWA/TX-92+1211-1F

28284412 TLBAsc SEE NEXT CRD

BRIDGES, CONCRETE--FOUNDATIONS AND PIERS—TESTING.

TG
320
.C52
F63
1991

Chai, Yuk Hon.
Flexural retrofit of circular reinforced bridge columns by steel jacketing : COLRET, a computer program for strength and ductility calculation / by Yuk Hon Chai, M.J. Nigel Priestley, Frieder Seible. -- La Jolla, Calif. : Dept. of Applied Mechanics & Engineering Sciences, University of California, San Diego, [1991]
vi, 132 p. : ill. ; 28 cm. -- (Report no. ; SSRP-91/05)
1. Columns, Concrete—Testing--Computer programs. 2. Bridges, Concrete--Foundations and piers--Testing. 3. COLRET (Computer program) 4. Bridges—E arthquake effects.

28361868 TLBAsc

BRIDGES--FLOORS--TESTING.

TG
325.6
.V43
U47
1992

Vegesna, Swarnalatha.
An ultimate load test to study bracing effects of bridge decks / by Swarnalatha Vegesna and Y.A. Yura. -- Austin, Tex. : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xiii, 55 p. : ill. ; 28 cm. -- (Research report / Center for Transportation Research, University of Texas at Austin ; no. 1239-2)
STRN: FHWA/TX-92+1239-2
1. Bridges--Floors--Testing. 2. Bridges--Live loads--Testing. 3. Girders--Test ing.

27426824 TLBAsc

BRIDGES--FOUNDATIONS AND PIERS--MAINTENANCE AND REPAIR.

TG
320
.M44
S44
1992

McLean, David I.
Seismic retrofitting of rectangular bridge columns for shear / David I. McLean, Laura L. Bernards. -- [Olympia, Wash.] : Washington State Dept. of Transportation, [1992]
x, 35 p. : ill. ; 28 cm.
SIRN: WA-RD 255.1

1. Bridges--Foundations and piers--Maintenance and repair. 2. Bridges--Earthquake effects. 3. Earthquake resistant design.

27217930 TLBAsc

BRIDGES--OHIO--MAINTENANCE AND REPAIR--COSTS.

TG
315
.M67
T78
1992

Moses, Fred.
Truck weight effects on bridge costs / by Fred Moses. -- Cleveland, Ohio : Dept. of Civil Engineering, Case Western Reserve University, 1992.
v, 50, [108] p. : ill. ; 28 cm.
SIRN: FHWA/OH-93/001

1. Bridges--Ohio--Maintenance and repair--Costs. 2. Trucks--Weight.

27694808 TLBAsc

BRIDGES--TEXAS--HARRIS COUNTY--LIVE LOADS.

TG
265
.083
T68
1992

Osegueda, Roberto Alejandro, 1960-
Towards the implementation of an overload permit formula using network models and BRINSAP / by Roberto A. Osegueda and Srinivasulu Gourabathina, James S. Noel. -- El Paso : University of Texas, [Center for Geotechnical and Highway Materials Research, 1992]
viii, 52 p. : maps ; 28 cm.
SIRN: FHWA/TX-91 1266-2

1. Bridges--Texas--Harris County--Live loads. 2. Trucks--Weight--Law and legislation--Texas--Harris County. 3. Trucks--Routes--Texas--Harris County. 4. Trucking--Licenses--Texas--Harris County.

27774171 TLBAsc

BRIDGES--TEXAS--LIVE LOADS.

TG
265
.083
H42
1993

Osegueda, Roberto Alejandro, 1960-
Heavy load vehicle routing using highway network models and bridge load formula : overweight permit rules based on bridge stresses / by Roberto A. Osegueda and James S. Noel. -- Rev. June 1993. -- El Paso : University of Texas, Civil Engineering Dept. ; [Springfield, Va., : Available through the National Technical Information Service, [1993]
viii, 49 p. ; 28 cm.
SIRN: FHWA/TX-92 1266-3
1. Bridges--Texas--Live loads. 2. Trucks--Weight--Law and legislation--Texas. 3. Trucks--Texas--Routes.

28573907 TLBAsc

BRIDGES--TEXAS--MAINTENANCE AND REPAIR.

TG
315
.S53
F53
1993

Sherman, Matthew R.
Field evaluation of bridge corrosion protection measures / by Matthew R. Sherman, R.L. Carrasquillo, D.W. Fowler ; conducted for Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin : Center for Transportation Research ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 210 p. : ill. ; 28 cm. -- (Research report ; no. 1300-1)
SIRN: FHWA/TX-93+1300-1

28924875 TLBAsc SEE NEXT CRD

BRIDGES--UNITED STATES--MAINTENANCE AND REPAIR.

TG
315
.S34
F53
1993

Saleeb, Atef F. (Atef Fatthy), 1952-

Field demonstration of non-destructive bridge evaluation using quantitative thermographic stress analysis / Atef Saleeb, Patrick Zuraski, Bradley Boyce. -- Akron, OH : Dept. of Civil Engineering, University of Akron ; Springfield, Va. : Available through the National Technical Information Service, [1993]
iii, 68 p. : ill. (some col.) ; 28 cm.
SIRN: FHWA/OH-93/015
1. Bridges--United States--Maintenance and repair. 2. Bridges--United States--Evaluation. 3. Non-destructive testing. 4. Bridges--Live loads.

29552787 TLBAsc

BUS LINES--TEXAS--TARRANT COUNTY--PLANNING.

HE
5634
.138
H38
1992

Hayes, Lynn.
Tarrant County transit needs assessment / [Lynn Hayes]. -- [Arlington, Tex.] : North Central Texas Council of Governments, [1992]
iii, 25, [1] p. : maps ; 28 cm.
SIRN: FTA-TX-08-0280-92-1

1. Bus lines--Texas--Tarrant County--Planning. 2. Railroads--Texas--Tarrant County--Commuting traffic--Planning. 3. Fringe parking--Texas--Tarrant County--Planning. 4. Local transit--Texas--Fort Worth--Planning.

26954636 TLBAsc

BUSES--ACCESS FOR THE PHYSICALLY HANDICAPPED.

IL
232.2
.H92
S77
1993

Ryan, Patricia H.
Strategies for implementing a standee-on-lift program for fixed-route bus service / Patricia H. Ryan, M. Annabelle Boyd. -- [Washington, D.C.] : Federal Transit Administration ; Springfield, VA : Available through the National Technical Information Service, [1993]
1 v. (various pagings) : ill. ; 28 cm.
SIRN: FTA-MA-06-0201-1
1. Buses--Access for the physically handicapped. 2. Aged--Transportation. 3. Physically handicapped--Transportation.

28707294 TLBAsc

CHOICE OF TRANSPORTATION.

HE
131
.I687r
no.1413

Innovations in travel behavior analysis, demand forecasting, and modeling networks : planning and administration / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 149 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1413)
ISBN 0-309-05560-1

1. Choice of transportation. 2. Travel--Forecasting. 3. Traffic estimation.

30105935 TLBAsc

CITY PLANNING--MASSACHUSETTS--BOSTON --CONGRESSES.

HT
177
.B71
F87
1989

Future directions for Boston and the Metro Region : a roundtable discussion of MetroPlan 2000 and a blueprint for Boston : briefing material / editors, Jeffrey Brown, Andrew Foley, Richard Henderson ; contributors, Milton Abelson ... [et al.]. -- [Boston : Boston Redevelopment Authority, 1989?]
1 v. (various pagings) : ill. ; 28 cm. -- ([BRA Research Department publications ; report no. 370])
1. City planning--Massachusetts--Boston--Congresses. 2. Regional planning--Massachusetts--Boston Metropolitan Area--Congresses.

28573699 TLBAsc

CIVIL SERVICE--UNITED STATES--PERSONNEL MANAGEMENT.

JK
765
.U54
P83
1992

United States. General Accounting Office.
The public service : issues confronting the federal civilian workforce : report to Congressional committees and the Director, Office of Personnel Management / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : U.S. General Accounting Office [distributor, 1982]
61 p. ; 28 cm.

1. Civil service--United States--Personnel management.

25329448 TLBAsc

CONTRACTORS--EAST (U.S.)--DIRECTORIES.

REF.
TA
217
.E65

ENR directory of contractors. Northeast region. -- 9th ed. (1991-92)- . --
New York, NY : ENR, c1991-
v. : ill. ; 28 cm.
Biennial.
Cover title: ENR directory. Northeast contractors.
Spine title: ENR contractors. Northeast.
Continues in part: ENR directory of contractors.
ISSN 1065-2191 = ENR directory of contractors. Northeast region

25257958 TLBAsc SEE NEXT CRD

ELECTRIC RAILROADS--RAILS--DETERIORATION.

TF
870
.D36
R34
1993

Daniels, Laurence E.
Rail transit corrugations / [Laurence E. Daniels]. -- [Washington, D.C.] : Federal Transit Administration, Technical Assistance Program ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xii, 120, [15] p. : ill. ; 28 cm.
STRN: FTA-MD-06-0141-93-1

1. Electric railroads--Rails--Deterioration. 2. Deformations (Mechanics)

28774845 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

HE
1617
.D48
1993

Development of analytical tools for evaluating operations of light-rail at-grade within an urban signal system / by Carol H. Walters ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xii, 59 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1278-1)
STRN: FHWA/TX-93/1278-1
1. Electronic traffic controls. 2. Railroads--Crossings. 3. Street-railroads--Texas--Planning.

29990015 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

TE
228
.H85
G84
1990

Bummer, Joseph E.
Guidelines for the use of leading and lagging left turn signal phasing / Joseph E. Hummer, Robert E. Montgomery, Kumares H. Sinha. -- Charlotte, N.C. : University of North Carolina at Charlotte, Transportation Academy, [1990]
30, [7] : chart ; 28 cm. -- (Transportation publication report ; no. 45)

1. Electronic traffic controls. 2. Traffic signs and signals. 3. Left-turn lanes.

27411579 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

TE
228
.F35
I42
1993

Fambro, Daniel B.
Implementation guidelines for retiming arterial networks / by Daniel B. Fambro, Srinivasa R. Sunkari and Srinivas M. Sangineni. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xx, 123 p. : ill. ; 28 cm. -- (Research report ; 1164-4)
STRN: FHWA/TX-93/1164-4
1. Electronic traffic controls. 2. Traffic signs and signals. 3. PASSER IV (Computer file) 4. TRANSYT-7F (Computer fil e)

29661907 TLBAsc

ELECTRONIC TRAFFIC CONTROLS.

HE
336
.L43
A82
1993

Asante, Seth A.
Selection criteria for left-turn phasing, indication sequence, and auxiliary sign / by Seth A. Asante, Siamak A. Ardekani and James C. Williams. -- Arlington, Tex. : University of Texas, Dept. of Civil Engineering ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xiv, 141 p. : ill. ; 28 cm.
STRN: FHWA/TX-91/1256-1F

1. Electronic traffic controls. 2. Traffic signs and signals. 3. Left-turn lanes.

27893162 TLBAsc

EMERGENCY TRANSPORTATION--PLANNING.

HE
336
.I7
W632
1992

Wohlschlaeger, Steven D.
Catalog of transportation management activities for major emergencies by Steven D. Wohlschlaeger, Gerald L. Ullman. -- Rev. Mar. 1992. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System, [1992]
iv, 24 p. ; 28 cm. -- (Report / Texas Transportation Institute ; 1231-2)

1. Emergency transportation--Planning. 2. Transportation--Texas--Planning. 3. Traffic flow--Texas.

27715860 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.N93
G57
1992

Nyerges, Timothy L.
A GIS prototype application for monitoring Washington State transportation planning studies / by Timothy L. Nyerges. -- [Olympia, Wash.] : Washington State Dept. of Transportation ; [Springfield, VA : Available through the National Technical Information Service, 1992]
v, 30, A-7 p. ; 28 cm.
STRN: WA-RD 285.2

1. Urban transportation--Washington (State)--Planning. 2. Transportation--Washington (State)--Planning. 3. Geographic information systems.

27744094 TLBAsc

GEOTEXTILES--EVALUATION.

TA
760
.P47
1993

Performance of flexible erosion control materials / [S.H. Godfrey ... [et al.] ; prepared for the Texas Department of Transportation, Division of Maintenance and Operations. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
186 p. in various pagings : ill. ; 28 cm. -- (Research report ; 1914-1)
STRN: TX/93-1914-1
1. Soil stabilization. 2. Geotextiles--Evaluation. 3. Roads--Embankments.

28530892 TLBAsc

GOVERNMENT SPENDING POLICY--UNITED STATES.

HJ
2051
.B68
G68
1992

Bowsher, Charles A., 1931-
Government management : major issues facing the Congress : statement of Charles A. Bowsher, Comptroller General of the United States, before the Committee on Governmental Affairs, United States Senate / United States General Accounting Office. -- Washington, DC : United States General Accounting Office, 1992.
20 p. ; 28 cm. -- (Testimony ; GAO/T-AFMD-92-4)
1. Government spending policy--United States. 2. Budget deficits--United States. 3. United States--Economic conditions--1981- 4. United States--Polit ics and government--1981-

25844694 TLBAsc

HAZARDOUS SUBSTANCES--TRANSPORTATION --MATHEMATICAL MODELS.

T
55.3
.H3
L57
1990

List, George.
Logistics for hazardous materials transportation : scheduling, routing and siting : first year interim report / prepared by George List and Pitu Mirchandani and Mark Turnquist. -- Washington, D.C. : U.S. Dept. of Transportation ; Distributed in cooperation with Technology Sharing Program, [1990]
1 v. (various pagings) : ill. ; 28 cm.
1. Hazardous substances--Transportation--Mathematical models. 2. Trucks--Routes--Mathematical models. 3. Shipment of goods--Mathematical models.

29706052 TLBAsc

HIGH OCCUPANCY VEHICLE LANES--WASHINGTON (STATE)--PUGET SOUND REGION.

HE
336
.H4
P83
1991

Puget Sound of Governments.
Regional HOV system report / Puget Sound Council of Governments. -- Seattle, WA (216 1st Ave. S., Seattle 98104) : The Council, [1991]
52, A-8 p. : maps ; 28 cm.

1. High occupancy vehicle lanes--Washington (State)--Puget Sound Region. 2. Car pools--Washington (State)--Puget Sound Region. 3. Traffic engineering--Washington (State)--Puget Sound Region.

25335231 TLBAsc

HIGH SPEED GROUND TRANSPORTATION--LAW AND LEGISLATION--UNITED STATES.

KF
26
.C69
1993a

United States. Congress. Senate. Committee on Commerce, Science, and Transportation.
High-Speed Ground Transportation Development Act of 1993 : report of the Senate Committee on Commerce, Science, and Transportation on S. 839. -- Washington : U.S. G.P.O., 1993.
ii, 38 p. ; 24 cm. -- (Report / 103d Congress, 1st session, Senate ; 103-208)

1. High speed ground transportation--Law and legislation--United States. 2. Magnetic levitation vehicles--Law and legislation--United States.

29608555 TLBAsc

HIGHWAY CAPACITY--TEXAS.

HE
336
.H48
K72
1992

Krammes, Raymond A.
Updated short-term freeway work zone lane closure capacity values / prepared by Raymond A. Krammes and Gustavo O. Lopez. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
viii, 25 p. ; 28 cm. -- (Report / Texas Transportation Institute ; 1108-5)
STRN: FHWA/TX-92/1108-5
1. Highway capacity--Texas. 2. Traffic estimation--Texas. 3. Express highways--Texas--Maintenance and repair.

28050775 TLBAsc

HIGHWAY PLANNING--MISSOURI--DECISION MAKING.

HE
356
.M8
P74
1993

Prioritizing improvements to two-lane highways / by Mark R. Virkler ... [et al.]. -- Columbia, Mo. : Dept. of Civil Engineering, University of Missouri-Columbia, [1993]

1. Highway planning--Missouri--Decision making. 2. Pavements--Missouri--Maintenance and repair.

29666879 TLBAsc

HIGHWAY RESEARCH--UNITED STATES.

KF
27
.P8964
1992

United States. Congress. House. Committee on Public Works and Transportation. Subcommittee on Investigations and Oversight.
Highway quality and durability : hearing before the Subcommittee on Investigations and Oversight of the Committee on Public Works and Transportation, House of Representatives, One Hundred Second Congress, second session, February 26, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1992.
iii, 215 p. : ill. ; 24 cm.
ISBN 0-16-0 39028-1

26826384 TLBAsc SEE NEXT CRD

HOMEOPATHY.

RX
71
.S63
H65
1985

Speight, Phyllis.
Homeopathic remedies for women's ailments / Phyllis Speight. -- Saffron Walden : Health Science Press, c1985.
150 p. ; 21 cm.
ISBN 0-85032-200-6 (pbk)

1. Women--Diseases--Homeopathic treatment. 2. Homeopathy.

17263967 TLBAsc GB87-54242

HOMEOPATHY--POPULAR WORKS.

RX
71
.V57
H65
1992

Vithoulkas, George.
Homeopathy : medicine of the new man / George Vithoulkas. -- New York : Simon & Schuster, 1992, c1979.
154 p. ; 20 cm.
ISBN 0-671-76328-8 (pbk.)

1. Homeopathy--Popular works.

27695768 TLBAsc 77-29272

INFRASTRUCTURE (ECONOMICS)--UNITED STATES.

KF
26
.E6
1992

United States. Congress. Senate. Committee on Environment and Public Works.
Infrastructure Growth and Employment Act of 1992 : hearing before the Committee on Environment and Public Works, United States Senate, One Hundred Second Congress, second session, on S. 2658 ... September 22, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1992.
iii, 124 p. : ill. ; 24 cm. -- (S. hrg. ; 102-890)
ISBN 0-16-039632-8

27635011 TLBAsc SEE NEXT CRD

INFRASTRUCTURE (ECONOMICS)--UNITED STATES--FINANCE.

HC
110
.C3
P67
1984

Porter, Douglas R.
Financing infrastructure to support community growth / by Douglas R. Porter and Richard B. Peiser. -- Washington, D.C. : Urban Land Institute, c1984.
32 p. : ill. ; 28 cm. -- (ULI Development component series, ISSN 0276-4970)
ISBN 0-87420-626-X (pbk.)

1. Infrastructure (Economics)--United States--Finance. 2. Local finance--United States. 3. Public works--United States.

10948676 TLBAsc 83-51849r92

INTERNET (COMPUTER NETWORK)

TK
5105.875
.I57
K86
1994

Krol, Ed.
The whole Internet : user's guide & catalog / Ed Krol. -- 2nd ed. -- Sebastopol, CA : O'Reilly & Associates, c1994.
xxiv, 543 p. : ill. ; 24 cm. -- (A Nutshell handbook)
ISBN 1-56592-063-5

1. Internet (Computer network) 2. Internet (Computer network)--Handbooks, manuals, etc. 3. Computer networks--Handbooks, manuals, etc.

30136643 TLBAsc

LITTER (TRASH)--ENVIRONMENTAL ASPECTS.

HE
131
.T687sy
no.184

Andres, Dorothy L.
Disposal of roadside litter mixtures / Dorothy L. Andres. -- Washington, D.C. : National Academy Press, 1993.
52 p. : maps ; 28 cm. -- (National Cooperative Highway Research Program synthesis of highway practice, ISSN 0547-5570 ; 184)
ISBN 0-309-05310-2

1. Litter (Trash)--Environmental aspects. 2. Refuse and refuse disposal. 3. Roads--Maintenance and repair.

29785593 TLBAsc 92-62818

LOCAL TRANSIT--RESEARCH--UNITED STATES--BIBLIOGRAPHY.

REF.
Z
7164
.T8
D72
1993

Drancsak, Marina.
Transit planning and research reports : annotated bibliography / prepared by Marina Drancsak ; prepared for Federal Transit Administration, U.S. Department of Transportation. -- Washington, DC (400 7th St., SW, Room 6100, Washington 20590) : U.S. Dept. of Transportation, Federal Transit Administration, Office of Technical Assistance and Safety, [1993]
viii, 53 p. ; 28 cm. -- (Report ; no. FTA-TTS-5-93-2)

29863398 TLBAsc SEE NEXT CRD

LOCAL TRANSIT--GOVERNMENT POLICY--UNITED STATES.

HE
4461
.M42
M37
1993

Mead, Kennetb M.
Mass transit : federal participation in transit benefit programs : statement of Kennetb M. Mead, Director, Transportation Issues, Resources, Community, and Economic Developmenmt Division, before the Subcommittee on Compensation and Employee Benefits, Committee on Post Office and Civil Service, House of Representatives / United States General Accounting Office. -- Wasbington, D.C. : The Office ; Gaitbersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
12, [2] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-93-72)

29011994 TLBAsc SEE NEXT CRD

LOCAL TRANSIT--UNITED STATES--FINANCE.

HE
4351
.W34
R43
1993

Walther, Erskine S.
Region IV tecbnical training workshops in transportation : financing the 1990s, selected presentations / prepared by Erskine S. Waltber and Lee Alexander. -- Wasbington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1993]
ii, 116 p. : ill. ; 28 cm.

1. Local transit--United States--Finance. 2. Local transit--United States--Management. 3. Local transit--United States--Contracting out.

28954756 TLBAsc

LOCAL TRANSIT--INFORMATION SERVICES.

HE
5634
.P8
B44
1993

Bebnke, Robert W.
German "smart bus" systems : potential application in Portland, Oregon. Volume 1, Technical report / prepared by Robert W. Behnke (Aegis Transportation Information Systems, Inc.). -- Wasbington, D.C. : Federal Transit Administration, Office of Tecbnical Assistance and Safety : Distributed in cooperation with Tecbnology Sharing Program, U.S. Dept. of Transportation, [1993]
ii, 100 p. : ill. ; 28 cm.
1. Local transit--Information services. 2. Audiotex. 3. Videotex systems. 4. Bus lines--Oregon--Portland Metropolitan Area--Communication systems.

29248974 TLBAsc

LOCAL TRANSIT--UNITED STATES--MANAGEMENT.

HE
4461
.C47
T73
1993

Cervero, Robert.
Transit-supportive development in tbe United States : experiences and prospects / prepared by Robert Cervero. -- Wasbington, D.C. : Federal Transit Administration : Distributed in cooperation with Technology Sharing Program, [1993]
xvii, 234 p. : ill., maps ; 28 cm.

1. Local transit--United States--Management. 2. Local transit--United States--Planning. 3. Real estate development--United States.

30058095 TLBAsc

LOCAL TRANSIT PASSES--GOVERNMENT POLICY--UNITED STATES.

HE
4461
.U54
M373
1992

United States. General Accounting Office.
Mass transit : information on federal participation in transit benefit programs : report to Congressional requesters / United States General Accounting Office. -- Wasbington, D.C. : U.S. General Accounting Office, [1992]
28 p. : chart ; 28 cm.

1. Local transit passes--Government policy--United States. 2. Employee fringe benefits--United States. 3. United States--Officials and employees --Transportation.

27025647 TLBAsc

MOTOR FUELS--TAXATION.

Oversize
HD
9579
.G4
S37
1985

Schrantz, Roger.
Policies and politics of indexed motor fuel taxes / by Roger Schrantz. -- [S.l. : s.n., 1985]
19, [13] p. ; 30 cm.

1. Motor fuels--Taxation.

23848567 TLBAsc

PARATRANSIT SERVICES--ILLINOIS--ROCK ISLAND COUNTY.

HE
5613
.P1
C662
1991

Coordinated paratransit in the era of the ADA : an assessment of the needs and opportunities for a paratransit system in the Rock Island County Metropolitan Mass Transit District / by Mary Kihl ... [et al.]. -- [Ames, Iowa] : Midwest Transportation Center, [1991]
ca. 150 p. in various pagings : ill. (some col.) ; 28 cm.
1. Paratransit services--Illinois--Rock Island County. 2. Physically handicapped--Illinois--Rock Island County--Transportation. 3. Aged--Illinois--Rock Island County--Transportation. 4. Rock Island County Metropolitan Mass Transit District.

29321806 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--ADDITIVES.

TE
270
.M38
S67
1993

Mauer, Dean.
Sprinkle treatment of bituminous concrete for improved skid resistance / by Dean Mauer and Robin Sukley. -- [Harrisburg, PA] : Pennsylvania Dept. of Transportation, Bureau of Construction and Materials ; [Springfield, VA : Available through the National Technical Information Service, 1993]
vi, 34 p. : ill. ; 28 cm.

1. Pavements, Aspahlt concrete--Additives. 2. Pavements--Pennsylvania--Skid resistance--Testing. 3. Pavements--Pennsylvania--Performance.

29426779 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--DESIGN AND CONSTRUCTION.

TE
270
.K46
R42
1991

Kennedy, Thomas William, 1938-
Recommendations to achieve density for asphalt-aggregate mixtures / by Thomas W. Kennedy, Mansour Solaimanian, William E. Elmore ; conducted for Texas State Department of Highways and Public Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
v, 22 p. : ill. ; 28 cm. -- (Research rep ort ; no. 468-3)
26375314 TLBAsc SEE NEXT CRD

PAVEMENTS, ASPHALT CONCRETE--TESTING.

TE
270
.L57
R47
1992

Little, Dallas N.
Resilient modulus of asphalt concrete / by Dallas N. Little, William W. Crockford, Venkata Krishna Reddy Gaddam ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Texas Transportation Institute, Texas A & M University. -- Rev. Apr. 1992. -- College Station, Tex. : The Institute ; [Springfield, Va. : available through National Technical Information Service, 1992]
x, 142 p. : ill. ; 28 cm. -- (Research report ; 1177-1F)
1. Pavement s, Asphalt concrete--Testing. 2. Pavements--Testing. 3. Pavements- -Performance.
29044540 TLBAsc

PAVEMENTS, ASPHALT--RECYCLING.

TE
220
.E87
R68
1992

Estakhri, Cindy K.
Routine maintenance uses for milled reclaimed asphalt pavement (RAP) / by Cindy K. Estakhri and Joe W. Button. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xii, 158 p. : ill. ; 28 cm. -- (Research report ; 1272-1)
STRN: FHWA/TX-93/1272-1

1. Pavements, Asphalt--Recycling. 2. Pavements, Asphalt--Maintenance and repair.

29530872 TLBAsc

PAVEMENTS, ASPHALT--TESTING.

TE
270
.M37
I53
1992

Maser, Kenneth R.
Influence of asphalt layering and surface treatments on asphalt and base layer thickness computations using radar / by Kenneth R. Maser and Tom Scullion. -- College Station, Tex. : Texas Transportation Institute ; [Springfield, VA : Available through the National Technical Information Service, 1992]
x, 79 p. : ill. ; 28 cm. -- (Research report ; 1923-1)
STRN: TX-92-1923-1
1. Pavements, Asphalt--Testing. 2. Pavements--Subgrades--Testing. 3. Ground penetrating radar.

27802370 TLBAsc

PAVEMENTS, CONCRETE--TESTING.

TE
278
.E923
1993

Evaluation of concrete and aggregate durability test / prepared by Missouri Highway and Transportation Department, Division of Materials and Research. -- [Jefferson City, Mo.] : Missouri Highway and Transportation Dept. ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
v, 64 leaves : ill. ; 28 cm. -- (Study / Missouri Cooperative Highway Research Program ; 86-1)
STRN: MCHRP 86-1
1. Pavements, Concrete--Testing. 2. Pavements, Concrete--Effect of temperature on--Testing. 3. Aggregates (Building mat erials)--Testing.

27643689 TLBAsc

PAVEMENTS--EVALUATION.

HE
131
.T687r
no.1410

Pavement monitoring and evaluation. -- Washington, D.C. : National Academy Press, 1993.
122 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1410)
ISBN 0-309-05557-1 (pbk.)

1. Pavements--Evaluation. 2. Pavements--Performance. 3. Pavements--Maintenance and repair.

30120966 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR--DATA PROCESSING.

TE
220
.P38
1992

Pavement management system PMS-III : mainframe version release 92.1 / the Ohio Department of Transportation, Resource International. -- [Columbus?] : Ohio Dept. of Transportation ; [Worthington, Ohio?] : Resource International, [1992]-
v. : ill. ; 28 cm.

1. Pavements--Maintenance and repair --Data processing.

26869040 TLBAsc

PAVEMENTS--TEXAS--MAINTENANCE AND REPAIR--MANAGEMENT--DATA PROCESSING.

IE
250
.S28
P76
1992

Scullion, Thomas.
Prototype needs estimating and project ranking software for the TxDOT PMS / by T. Scullion, C.H. Michalak, R.E. Smith ; sponsored by Texas Department of Transportation. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 87 p. : ill. ; 28 cm. -- (Research report ; 1918-1F)
STRN: TX-92/1918-1F

28253195 TLBAsc SEE NEXT CRD

PAVEMENTS--OVERLAYS.

TE
220.3
.R62
L32
1992

Rodriguez-Gomez, Jessica.
Laboratory investigation of delamination and debonding of thin-bonded overlays due to vehicular vibration / by Jessica Rodriguez-Gomez and Sobeil Nazarian. -- El Paso, Tex. : Center for Geotechnical & Highway Materials Research, the University of Texas at El Paso, [1992]
xxiii, 85 p. : ill. ; 28 cm. -- (Research report ; 1920-1, v. 1)

1. Pavements--Overlays. 2. Pavements--Overlays--Research--Texas.

26733949 TLBAsc

PENNSYLVANIA TURNPIKE COMMISSION.

HE
356
.P4
P46
1993

The Pennsylvania Turnpike Commission's incident management team / Pennsylvania Turnpike Commission, Incident Management Team. -- [Washington, D.C.] : U.S. Dept. of Transportation, [1993]
i, 18 p. ; 28 cm.

1. Traffic safety--Pennsylvania. 2. Emergency road service--Pennsylvania. 3. Toll roads--Pennsylvania--Communication systems. 4. Pennsylvania Turnpike Commission.

28487576 TLBAsc

PAVEMENTS, REINFORCED CONCRETE--DESIGN AND CONSTRUCTION.

TE
270
.K86
I46
1992

Kunt, Mehmet M.
Improved design and construction procedures for concrete pavements based on mechanistic modeling techniques / by Mehmet M. Kunt, B. Frank McCullough. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vii, 86 p. : charts ; 28 cm. -- (Research report ; 1169-5F)
STRN: FHWA/TX-92+1169-5F
1. Pavements, Reinforced concrete--Design and construction. 2. Pavements, Reinforced co ncrete--Testing. 3. Pavements, Re inforced concrete--Cracking--Com puter simulation.

28196776 TLBAsc

PHYSICALLY HANDICAPPED--TRANSPORTATION--CONGRESSES.

SV
3022
.I57
I57
1986

International Conference on Mobility and Transport for Elderly and Disabled Persons (4th : [1986])
Mobility in the global village ; a state-of-the-art review = Mobilité dans le village global ; un aperçu des progrès les plus récents / compiled and published by Transport Canada = dressé et publié par Transports Canada. -- [S.l.] : Transport Canada, [1986?].
190 p. in various pagings : ill. ; 28 cm.
1. Aged--Transportation--Congresses. 2. Physically handicapped--Transportation--Congresses. 3. Paratransit services--Congresses.

26235922 TLBAsc

PAVEMENTS, REINFORCED CONCRETE--MAINTENANCE AND REPAIR.

TE
220.3
.A44
F42
1993

Allison, Brent T.
Feasibility study for a full-scale bonded concrete overlay on IH-10 in El Paso, Texas / by Brent T. Allison, B. Frank McCullough, David W. Fowler ; conducted for the Texas Department of Transportation. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 84 p. : ill. ; 28 cm. -- (Research report ; 1957-1F)
STRN: TX-93+1957-1F

28860465 TLBAsc SEE NEXT CRD

PRESTRESSED CONCRETE BEAMS--TESTING.

TG
305
.P68
S53
1990

Powers, Anthony C.
Shear strength of pretensioned concrete girders in negative moment regions / by Anthony C. Powers, Michael E. Kreger, and John E. Breen. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1990]
xvii, 122 p. : ill. (some folded) ; 28 cm. -- (Research report ; 1127-2)
STRN: FHWA/TX-92+1127-2
1. Prestressed concrete beams--Testing. 2. Concrete beams--Testing.

27847191 TLBAsc

RAILROADS--NEW YORK (STATE)--SAFETY MEASURES.

HE
1780.5
.N7
S23
1992

Gilbert, Susan.
Safety investigation of the New York Metropolitan Transportation Authority Long Island Rail Road. Part C, The Long Island Rail Road, summary report / [Susan Gilbert]. -- [Washington, D.C.] : Federal Railroad Administration, [1992]
173 p. : ill. ; 28 cm.
STRN: FTA-NY-90-A004-92-2

1. Railroads--New York (State)--Safety measures. 2. Railroads--New York (State)--Accidents. 3. Railroads--New York Metropolitan Area--Commuting traffic. 4. Long Island Rail Road.

28444157 TLBAsc

RAILROADS--UNITED STATES--SAFETY MEASURES.

HE
1780
.U54
A35
1991

United States. General Accounting Office. RCED.
Railroad safety : weaknesses exist in FRA's enforcement program : report to the chairman, Committee on Energy and Commerce, House of Representatives / United States General Accounting Office, [Resources, Community, and Economic Development Division]. -- Washington, D.C. : The Office, [1991]
28 p. ; 28 cm.

1. United States. Federal Railroad Administration. 2. Railroads--United States--Safety measures.

08 APR 94 27134864 TLBAsc

ROADS--ECONOMIC ASPECTS--NORTH CAROLINA.

HE
355.3
.E3
C62
1988

Clay, James W.
Jobs, highways and regional development in North Carolina / by James W. Clay, Alfred W. Stuart, Wayne A. Walcott. -- Charlotte, N.C. : [University of North Carolina at Charlotte, Transportation Academy, [1988]
33, [20] p. : ill. ; 28 cm. -- (Transportation publication report ; no. 17)

1. Roads--Economic aspects--North Carolina. 2. Regional planning--North Carolina. 3. Rural development--North Carolina.

21142690 TLBAsc

ROADS--GUARD FENCES--TESTING.

TE
228.2
.S93
I46
1994

Svenson, Alrik L.
Impact characteristics of glass fiber-reinforced composite materials for use in roadside safety barriers / [Alrik L. Svenson]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
vii, 65 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-090

1. Roads--Guard fences--Testing. 2. Reinforced plastics--Testing. 3. Composite materials--Testing.

29915183 TLBAsc

ROADS--GUARD FENCES--TESTING.

TE
228.2
.B37
L37
1992

Bartlett, R.
Lateral load capacity of posts and footings for metal beam guardrails located close to slopes / by R. Bartlett, B.L. Kutter. -- [Sacramento, Calif.] : California Dept. of Transportation, [1992]
vii, 145 p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-93-02

1. Roads--Guard fences--Testing. 2. Roads--Safety appliances--Testing.

28920100 TLBAsc

ROADS--GUARD FENCES--TESTING.

TE
228.2
.H37
V43
1992

Hawatky, Suema.
Vehicle crash tests of a concrete median barrier retrofitted [sic] with a concrete glare screen : report / prepared by Suema Hawatky and Payam Rohani. -- [Sacramento] : California Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1992]
iv, 33, [19] p. : ill. ; 28 cm.
STRN: FHWA/CA/TL-92/05

1. Roads--Guard fences--Testing. 2. Roads--Crash cushions--Testing.

26 APR 94 29431662 TLBAsc

ROADS--INTERCHANGES AND INTERSECTIONS--DESIGN AND CONSTRUCTION.

TE
176
.P37
G84
1992

Pate, Johnnie R.
Guidelines for the design of urban arterial interchanges in densely populated areas / Johnnie R. Pate, Jr. and Vergil G. Stover. -- Rev. Dec. 1992. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
x, 66 p. : ill. ; 28 cm. -- (Research report ; 1237-2F)
STRN: FHWA/TX-92/1237-2F
1. Roads--Interchanges and intersections--Design and construction.

28860956 TLBAsc

ROADS--INTERCHANGES AND INTERSECTIONS--DESIGN AND CONSTRUCTION--DATA PROCESSING.

TE
175
.I57
1991

Interactive graphics intersection design system : first-stage development / by Thomas W. Rioux ... [et al.] ; conducted for Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin, Tex. : Center for Transportation Research, University of Texas ; [Springfield, Va. : Available through the National Technical Information Service, 1991]
vi, 45p. : ill. ; 28 cm. -- (Research report ; no. 1139-1F)
STRN: FHWA/TX-92+1139-1F

26533154 TLBAsc SEE NEXT CRD

ROADS--LIGHTING--BREAK-AWAY SUPPORTS --TESTING.

TE
228
.P75
1993

Preliminary analysis of transformer bases / Suchitra B. Shrestha ... [et al.]. -- Rev. Aug. 1993. -- College Station, Tex. : Texas Transportation Institute, The Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993] xi, 49 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1963-1F)
STRN: TX-92/1963-1F
1. Roads--Lighting--Break-away supports--Testing. 2. Roads--Lighting --Break-away supports--Evaluation. 3. Roads--Safety appliances--Testing.

29990013 TLBAsc

ROADS--OREGON--FINANCE.

HE
356
.07
F67
1993

Forward Oregon, roads in a new context : 1993 Oregon roads finance study : final report / Oregon Dept. of Transportation ... [et al.]. -- [Salem, Or.] : The Dept., [1993] 1 v. (various pagings) : ill. ; 28 cm.

1. Roads--Oregon--Finance.

29219104 TLBAsc 93-621676

ROADS--PENNSYLVANIA--CRASH CUSHIONS--EVALUATION.

TE
228.2
.S69
I57
1992

Snyder, Richard R.
International Barrier Corporation's IBC Mark-7 highway barrier system / prepared by Richard R. Snyder. -- [Harrisburg, PA] : Pennsylvania Dept. of Transportation, Bureau of Bridge and Roadway Technology ; [Springfield, VA : Available through the National Technical Information Service, 1992] iv, 24, [36] p. : ill. ; 28 cm.

1. Roads--Pennsylvania--Crash cushions--Evaluation. 2. Roads--Pennsylvania--Safety measures--Evaluation.

18 MAR 94 28132385 TLBAsc

ROADS--UNITED STATES--FINANCE.

HE
355.3
.F3
H534
1992

United States. General Accounting Office.
Highway trust fund : strategies for safeguarding highway financing : report to the Chairman, Committee on the Budget, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1992] 19 p. ; 28 cm.

1. Roads--United States--Finance. 2. Express highways--United States--Finance. 3. Federal aid to transportation--United States.

26869761 TLBAsc

RUNOFF--TEXAS.

TC
175.2
.C62
C66
1992

Claborn, Billy J.
Control of sediment deposition at Big Sandy Draw Bridge and Interstate 20 / by Billy J. Claborn. -- Lubbock, TX : Dept. of Civil Engineering, Texas Tech University ; Springfield, VA : Available through N.T.I.S., [1992] xi, 25 p. : ill., maps (some folded) ; 28 cm.

1. Runoff--Texas. 2. Scour at bridges. 3. Sediment transport. 4. Sedimentary basins.

26 APR 94 28238442 TLBAsc

RUNOFF--TEXAS--AUSTIN.

TD
428
.R84
R48
1993

A review and evaluation of literature pertaining to the quantity and control of pollution from highway runoff and construction / by Michael E. Barrett ... [et al.]. ; conducted for the Texas Department of Transportation by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin, Tex. : The Center ; Springfield, Va. : available through National Technical Information Service, [1993] xx, 140 p. : ill. ; 28 cm. -- (Research report ; 1943-1)
1. Runoff--Texas--Austin. 2. Water--Pollution--Texas--Austin.

29900869 TLBAsc

RUNWAYS (AERONAUTICS)--TEXAS--MAINTENANCE AND REPAIR--MANAGEMENT --DATA PROCESSING.

TL
725.3
.R8
F73
1993

Freeman, Tom.
Implementation of the Micro PAVER pavement management system on Texas Division of Aviation airfields / by Tom Freeman and George B. Dresser. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1993] viii, 90 p. : ill. ; 28 cm. -- (Research report ; 1913-1)
STRN: TX-93/1913-1

16 MAR 94 29453971 TLBAsc SEE NEXT CRD

SHIP RESISTANCE.

VM
751
.K66
R47
1993

Klosinski, Walter E.
Resistance and seakeeping model tests of two U.S. Coast Guard notional designs of 110 ft and 120 ft WPB hulls / Walter E. Klosinski and P. Ward Brown (Davidson Laboratory, Stevens Institute of Technology, Castle Point Station). -- Groton, Conn. : U.S. Coast Guard Research and Development Center ; Springfield, Va. : Available through the National Technical Information Service, [1993] 1 v. (various pagings) : ill. ; 28 cm.
STRN: CG-D-16-93
1. Ship resistance. 2. Ships--Hydrodynamics. 3. Ships--Seakeeping. 4. Government vessels--United States--Evaluation.

29661867 TLBAsc

SHIPS--FIRES AND FIRE PREVENTION.

VK
1250
.B43
F57
1993

Beene, D. E.
Fire endurance testing of fiberglass piping / D.E. Beene, Jr. -- Washington, DC : U.S. Coast Guard, Office of Engineering, Logistics, and Development ; Springfield, VA : Available through the National Technical Information Service, [1993]
vii, 42, [7] p. : ill. ; 28 cm.
STRN: CG-D-04-93

1. Ships--Fires and fire prevention. 2. Pipe, Plastic--Fires and fire prevention. 3. Glass fibers.

29237243 TLBAsc

SOIL STABILIZATION--TEXAS.

TE
211
.B62
I54
1992

Bohrowski, Lenny.
Injection of a liquid soil stabilizer into subgrade soil / Lenny Bobrowski. -- Austin : Texas Dept. of Transportation, Division of Materials and Tests, [1992]
xi, 27 p. : ill., map ; 28 cm. -- (Research report ; DBT-30)

1. Soil stabilization--Texas. 2. Pavements--Subgrades.

28227779 TLBAsc

TELECOMMUTING--LAW AND LEGISLATION--UNITED STATES.

KF
27
.E574
1992

United States. Congress. House. Committee on Energy and Commerce. Subcommittee on Telecommunications and Finance.
Telecommuting : hearing before the Subcommittee on Telecommunications and Finance of the Committee on Energy and Commerce, House of Representatives, One Hundred Second Congress, second session, on H.R. 5082 ... July 29, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1992.
iii, 94 p. ; 23 cm.
ISBN 0-16-039423-6

27311682 TLBAsc SEE NEXT CRD

TELEVISION ADVERTISING.

HE
5620
.D7
A84
1992

Atkin, Charles K.
The Influence of responsible drinking TV spots and automobile commercials on young drivers / by Charles K. Atkin, William DeJong, Lawrence Wallack. -- Washington, D.C. : AAA Foundation for Traffic Safety, 1992.
[v], 51 p., 31 p. ; 28 cm.

1. Drinking and traffic accidents. 2. Television advertising.

28132382 TLBAsc

TRACTOR TRAILER COMBINATIONS--SAFETY REGULATIONS--UNITED STATES.

KF
2220
.T6
A224
1993

United States. General Accounting Office.
Longer combination trucks : driver controls and equipment inspection should be improved : report to Congressional committees / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
36 p. : ill., map ; 28 cm.
1. Tractor trailer combinations--Safety regulations--United States. 2. Tractor trailer combinations--United States--Inspection.

29402488 TLBAsc

TRAFFIC ACCIDENTS--LOCATION--MATHEMATICAL MODELS.

HE
5613
.P46
S97
1992

Pendleton, Olga.
A systemwide methodology for evaluating highway safety studies / [Olga J. Pendleton]. -- McLean, Va. : Federal Highway Administration ; [Springfield, VA : Available through the National Technical Information Service, 1992]
viii, 105 p. ; 28 cm.
STRN: FHWA-RD-92-049

1. Traffic accidents--Location--Mathematical models. 2. Traffic safety--Evaluation. 3. BEATS (Computer program).

27025395 TLBAsc

TRAFFIC ASSIGNMENT--DATA PROCESSING--HANDBOOKS, MANUALS, ETC.

HE
336
.T68
D73
1992

Dresser, George B.
Texas TRANPLAN application guide / by George B. Dresser and Tom A. Williams ; sponsored by Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; Springfield, Va. : Available through the National Technical Information Service, [1992]
viii, 77 p. ; 28 cm. -- (Research report ; no. 947-6)
STRN: TX-90/947-6

27472970 TLBAsc SEE NEXT CRD

TRAFFIC CONGESTION--MATHEMATICAL MODELS.

HE
336
.C64
W44
1992

Wei, Louis.
Priority programming for congested transportation networks / by Louis Wei and Paul Schonfeld. -- [Baltimore] : Maryland State Highway Administration, [1991]
119 p. in various pagings : ill. ; 28 cm.
STRN: MD-92/03

1. Traffic congestion--Mathematical models. 2. Traffic assignment--Mathematical models. 3. Highway planning--Mathematical models.

26388278 TLBAsc

TRAFFIC ENGINEERING.

HE
336
.C64
U64
1991

Ullman, Gerald L.
Planning guidelines for major transportation emergencies / by Gerald L. Ullman, Nada D. Trout. -- College Station, TX : Texas Transportation Institute, Texas A & M University System ; Springfield, VA : available through National Technical Information Service, [1991]
vi, 35 p. : 1 map ; 28 cm. -- (Research report ; 1231-3F)

1. Traffic engineering. 2. Emergency management. 3. Traffic safety.

25778620 TLBAsc

TRAFFIC ENGINEERING--SOFTWARE.

TE
228
.B84
D48
1993

Bullock, Darcy.
Development of software standards for advanced transportation control systems, final report. Volume 1, A model for roadway traffic control software / Darcy Bullock, Chris Hendrickson. -- Irvine, CA : University of California, Institute of Transportation Studies, [1993]
xi, 238 p. : ill. ; 28 cm. -- (UCI-ITS-RR, ISSN 0193-5860 ; 93-1)

1. Traffic engineering--Software. 2. Electronic traffic controls. 3. TCBLKS (Computer program)

29336160 TLBAsc

TRAFFIC FLOW.

HE
131
.T687n
no.358

Recommended practices for use of traffic barrier and control treatments for restricted work zones / H.E. Ross ... [et al.]. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1994.
112 p. : ill. ; 28 cm. -- (Report, ISSN 0077-5614 ; 358)
ISBN 0-309-05356-0

1. Traffic flow. 2. Roads--Design and construction.

30124909 TLBAsc 93-61361

TRAFFIC FLOW--COMPUTER SIMULATION.

HE
336
.C64
B84
1992

Bui, Dat D.
Computational realizations of the entropy condition in modeling congested traffic flow / by Dat D. Bui and Paul Nelson and Srinivasa I. Narasimhan. -- College Station, TX : Texas Transportation Institute ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 34 p. ; 28 cm. -- (Report ; 712415-1)
STRN: SWUTC/92/712415-1
1. Traffic flow--Computer simulation. 2. Traffic congestion--Computer simulation. 3. FREFLO (Computer program) 4. Express highways.

29984055 TLBAsc

TRAFFIC FLOW--MATHEMATICAL MODELS.

TE
228
.B47
S77
1992

Herrick, G. Curtis.
Strategies for improving traffic operations at oversaturated diamond interchanges / by G. Curtis Herrick and Carroll J. Messer. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through National Technical Information Service, 1992]
xii, 73 p. : ill. ; 28 cm. -- (Research report ; 1148-4F)
STRN: FHWA/TX-92/1148-4F
1. Traffic flow--Mathematical models. 2. Electronic traffic controls. 3. Roads--Interchanges and intersections.

27466934 TLBAsc

TRAFFIC FLOW--TEXAS.

HE
336
.T7
B37
1992

Barnes, Kirk E.
Considerations in the application of collector-distributor designs for improving mainlane freeway operations / Kirk E. Barnes, James W. Hanks, Jr., John M. Mounce ; sponsored by the Texas Department of Transportation ; in cooperation with the U.S. Department of Transportation, U.S. Federal Highway Administration. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
vi, 15 p. : ill ; 28 cm. -- (Research report ; 1232 -16)
STRN: FHWA/ TX-92/1232-16

28173647 TLBAsc SEE NEXT CRD

TRAFFIC FLOW--TEXAS.

HE
336
.T7
W63
1992

Wohlschlaeger, Steven D.
Incident response and clearance in the state of Texas : case studies of four motorist assistance patrols / by Steven D. Wohlschlaeger, Kevin N. Balke ; sponsored by Texas Department of Transportation in cooperation with U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System, 1992.
vii, 51 p. : ill. ; 28 cm. -- (Research report ; 1232-15)
STRN: TX-92/1232-15

28252974 TLBAsc SEE NEXT CRD

TRAFFIC SIGNS AND SIGNALS.

TE
228.3
.D82
G84
1992

Dudek, Conrad L.
Guidelines on the use and operation of changeable message signs / by Conrad L. Dudek. -- Rev. Nov. 1992. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
x, 101 p. : ill. ; 28 cm. -- (Research report ; 1232-9)
STRN: FHWA/TX-92/1232-9

1. Traffic signs and signals. 2. Highway communications. 3. Optical communications.

27466921 TLBAsc

TRAFFIC SIGNS AND SIGNALS.

TE
228
.K66
R35
1993

Knoblauch, Richard L.
Ramp signing for trucks / [Richard L. Knoblauch and Marsha Nitzburg]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 111 p. : ill. ; 28 cm.
STRN: FHWA-RD-91-042

1. Traffic signs and signals. 2. Roads--Interchanges and intersections. 3. Trucks--Dynamics.

28080820 TLBAsc

TRAFFIC SIGNS AND SIGNALS--MAINTENANCE AND REPAIR.

TE
228
.S33
S46
1992

Scheck, D. E. (Donald E.)
Implementation of coordinated signal monitoring and playback system / submitted by Donald E. Scheck (Ohio Automation, Inc.). -- [Columbus] : Ohio Dept. of Transportation ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
iv, 101 p. : ill. ; 28 cm.
STRN: FHWA/OH-93/005

1. Traffic signs and signals--Maintenance and repair. 2. Electronic traffic controls--Maintenance and repair.

28104227 TLBAsc

TRAFFIC SIGNS AND SIGNALS--BREAK-AWAY SUPPORTS.

TE
228
.P66
T47
1991

Pope, Mel.
Test program for breakaway signs / by Mel Pope. -- Austin : Texas Dept. of Transportation, [1991].
v, 15 p. ; 28 cm. -- (Research report ; DHT-29)

1. Traffic signs and signals--Texas. 2. Traffic signs and signals--Break-away supports.

28229049 TLBAsc

TRAFFIC SIGNS AND SIGNALS--TEXAS--HOUSTON--EVALUATION.

TE
228
.S63
1993

Space management : an application of dynamic lane assignment / by Rohini K. Jella ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : Available through National Technical Information Service, 1993]
xxxviii, 132 p. : ill. ; 28 cm. -- (Research report ; 1232-18)
STRN: FHWA/TX-92/1232-18

1. Traffic signs and signals--Texas--Houston--Evaluation. 2. Express highways--Texas--Houston--Communication systems. 3. Fiber optics.

29696566 TLBAsc

TRAFFIC SIGNS AND SIGNALS--EVALUATION.

TE
228
.H83
F42
1993

Hughes, Warren E.
Feasibility of an automatic truck warning system / [Hugh W. McGee ... et al.]. -- McLean, Va. : U.S. Dept. of Transportation, Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vii, 73 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-039

1. Traffic signs and signals--Evaluation. 2. Trucks--Accidents. 3. Roads--Interchanges and intersections.

29291586 TLBAsc

TRAFFIC SURVEYS--TEXAS--HOUSTON.

HE
372
.H8
S52
1992

Shafer, Mark A.
Travel impacts of the U.S.-59 Southwest Freeway reconstruction project in Houston / prepared by Mark A. Shafer, Kevin D. Tyer and Raymond A. Krammes. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1992]
x, 25, A9 p. : ill. ; 28 cm. -- (Report / Texas Transportation Institute ; 1108-4)
SIRN: FHWA/TX-92/1108-4
1. Traffic surveys--Texas--Houston. 2. Traffic estimation--Texas--Houston. 3. Express highways--Texas--Houston--Maintenance and repair.

27841709 TLBAsc

TRAFFIC SIGNS AND SIGNALS--EVALUATION.

TE
228
.W65
M67
1993

Womack, Katie N.
Motorist comprehension of traffic control devices : statewide survey results / by Katie N. Womack, H. Gene Hawkins, John M. Mounce. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : available through National Technical Information Service, 1993]
1 v. (various pagings) : ill. ; 28 cm. -- (Research report ; 1261-2)

1. Traffic signs and signals--Evaluation.

29010771 TLBAsc

TRANSPORTATION--ENVIRONMENTAL ASPECTS--BIBLIOGRAPHY.

REF.
Z
5863
.T7
T72
1992

Transportation and the environment : an annotated bibliography / Federal Railroad Administration, Office of Policy. -- [Washington, D.C.] : Federal Railroad Administration, Office of Policy, [1992]
52 p. ; 28 cm.

1. Transportation--Environmental aspects--Bibliography. 2. Air--Pollution--Bibliography. 3. Noise pollution--Bibliography. 4. Water--Pollution--Bibliography.

27160936 TLBAsc

TRANSPORTATION--MINNESOTA--TWIN CITIES METROPOLITAN AREA--PLANNING.

HE
336
.C64
A42
1988

Alderson, Steve.
Transportation congestion : something very big is building in the Twin Cities / by Steve Alderson and Ken Reddick. -- St. Paul, Minn. : Metropolitan Council of the Twin Cities Area, [1988]
19 p. : ill., maps ; 21 cm. -- (Publication / Metropolitan Council of the Twin Cities Area ; no. 310-88-016)

1. Transportation--Minnesota--Twin Cities Metropolitan Area--Planning. 2. Traffic congestion--Minnesota--Twin Cities Metropolitan Area.

17738658 TLBAsc

TRANSPORTATION--NEW HAMPSHIRE--FORECASTING.

HE
213
.N4
N48
1993

New Hampshire. 21st Century Transportation Task Force.
New Hampshire's transportation in the 21st century. -- Concord, NH : New Hampshire Dept. of Transportation, 1993.
46 p. : ill., col. maps ; 28 cm.

1. New Hampshire. 21st Century Transportation Task Force. 2. Transportation--New Hampshire--Forecasting. 3. Transportation--New Hampshire.

29791209 TLBAsc 93-622578

TRANSPORTATION--NORTH CAROLINA--CHARLOTTE METROPOLITAN AREA--PLANNING.

HE
310
.C33
K72
1992

Krauss, Russell.
Overview of transportation planning for the Greater Charlotte, North Carolina Region / by Russell Krauss, Andrew McAdams. -- Charlotte, N.C. : University of North Carolina at Charlotte, Center for Interdisciplinary Transportation Studies, [1992]
15, [12] leaves : ill. ; 28 cm. -- (Transportation publication report ; no. 77)
1. Transportation--North Carolina--Charlotte Metropolitan Area--Planning. 2. Urban transportation--North Carolina--Charlotte Metropolitan Area--Planning. 3. Regional planning--North Carolina--Charlotte Metropolitan Area.

27475560 TLBAsc

TRIP GENERATION--HANDBOOKS, MANUALS, ETC.

HE
370
.C75
C52
1992

Chang, Gang-Len.
A trip rate interaction model for mixed land use developments : manual for users / by Gang-Len Chang, Chao-Hua Chen, Everett C. Carter (Department of Civil Engineering, University of Maryland, College Park). -- [Baltimore, MD : Maryland State Highway Administration ; Springfield, VA : Available through the National Technical Information Service, 1992]
ii, 71 p. : ill. ; 28 cm.
SIRN: MD-92/01
1. Trip generation--Handbooks, manuals, etc. 2. Traffic estimation--Handbooks, manuals, etc. 3. Traffic flow--Handbooks, manuals, etc. 4. Land use--Planning--Handbooks, manuals, etc.

27806957 TLBAsc

TRUCKING--TEXAS, SOUTHERN

HE
5633
.T4
I72
1992

Transportation aspects of the maquiladora industry located on the Texas/Mexico border / by Dock Burke ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
212 p. in various pagings : ill. ; 28 cm. -- (Research report ; 2034-2F)
SIRN: TX-92/2034-2F
1. Trucking--Texas, Southern 2. Infrastructure (Economics)--Texas, Southern 3. Roads--Texas, Southern 4. Foreign trade and employment--Texas. 5. Foreign trade and employment--Mexico.

29180480 TLBAsc

TRUCKING--UNITED STATES--DIRECTORIES.

REF.
HE
5623
.A45
M67

Motor carrier professional services directory. -- 1990- . --
Alexandria, VA : Information Center, American Trucking Associations, c1990-
v. ; 22 cm.
Annual.
Continues: Official directory of motor carrier consultants.
ISSN 1056-0246 = Motor carrier professional services directory

1. Transportation consultants--United States--Directories. 2. Trucking--United States--Directories.

23369201 TLBAsc 91-648254

TRUCKS--TIRES.

TL
270
.T53
I46
1992

Tielking, J. T.
Impact of wide base radial truck tires on highway safety / by J.T. Tielking and V.J. Pezoldt (Texas Transportation Institute). -- Washington, D.C. : AAA Foundation for Traffic Safety, [1992]
iii, 71 p. : ill. ; 28 cm.

1. Trucks--Tires. 2. Trucks--Accidents.

26524330 TLBAsc

TRUCKS--WEIGHT--MEASUREMENT.

TL
154
.W4
S67
1989

Southgate, Herbert F.
Relationship between weights measured by permanent truck scales and Golden River weigh-in-motion scales / by Herbert F. Southgate. -- Lexington, Ky. : Kentucky Transportation Center, College of Engineering, University of Kentucky, [1989]
vi, 82 p. ; 28 cm. -- (Research report / Kentucky Transportation Center ; KTC-89-31)

1. Trucks--Weight--Measurement. 2. Pavements--Live loads--Testing--Data processing. 3. Motor vehicle scales.

23210141 TLBAsc

UNDERGROUND STORAGE--GOVERNMENT POLICY--UNITED STATES.

TP
692.5
.U54
H39
1992

United States. General Accounting Office.
Hazardous materials : upgrading of underground storage tanks can be improved to avoid costly cleanups : report to the Chairman, Subcommittee on Environment, Energy and Natural Resources, Committee on Government Operations, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
40 p. : ill. ; 28 cm.

26198474 TLBAsc SEE NEXT CRD

UNITED STATES.
CLEAN AIR ACT AMENDMENTS OF 1990.

TD
886.5
.S73
O87
1993

Stephenson, Amy.
An outline of transportation-related requirements for compliance with the Clean Air Act Amendments of 1990 / by Amy Stephenson and George B. Dresser ; sponsored by the Texas Department of Transportation. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 64 p. ; 28 cm. -- (Research report ; 1279-1)
SIRN: FHWA/TX-92/1279-1

29530901 TLBAsc SEE NEXT CRD

URBAN TRANSPORTATION--CALIFORNIA, SOUTHERN--PLANNING.

HE
309
.C2
R49
1993

Review of the transportation planning process in the Southern California Metropolitan Area / prepared by U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center. -- Cambridge, MA : The Center, [1993]
vi, 66 p. ; 28 cm.

1. Urban transportation--California, Southern--Planning. 2. Urban transportation--California, Southern--Planning--Evaluation. 3. Transportation--California, Southern--Planning.

29883807 TLBAsc

URBAN TRANSPORTATION--MANAGEMENT.

HE
131
.T687r
no.1404

Transportation system management, parking, and travel demand management : highway operations, capacity, and traffic control / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 100 p. : ill., maps ; 28 cm. -- (Transportation research record ; no. 1404)
ISBN 0-309-05550-4

1. Urban transportation--Management. 2. Urban transportation policy. 3. Transportation--Planning. 4. Automobile parking.

29825729 TLBAsc

URBAN TRANSPORTATION--MINNESOTA--MINNEAPOLIS METROPOLITAN AREA--PLANNING.

HE
310
.M6
R49
1993

Review of the transportation planning process in the Minneapolis-St. Paul Metropolitan Area / prepared by U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center. -- Cambridge, MA : The Center, [1993]
vi, 58 p. ; 28 cm.
1. Urban transportation--Minnesota--Minneapolis Metropolitan Area--Planning. 2. Urban transportation--Minnesota--Minneapolis Metropolitan Area--Planning--Evaluation. 3. Transportation--Minnesota--Minneapolis Metropolitan Area--Planning.

29883769 TLBAsc

URBAN TRANSPORTATION--PENNSYLVANIA--PITTSBURGH METROPOLITAN AREA--PLANNING.

HE
310
.P6
R49
1993

Review of the transportation planning process in the Pittsburgh Metropolitan Area / prepared by U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center. -- Cambridge, MA : The Center, [1993]
v, 43 p. ; 28 cm.
1. Urban transportation--Pennsylvania--Pittsburgh Metropolitan Area--Planning. 2. Urban transportation--Pennsylvania--Pittsburgh Metropolitan Area--Planning--Evaluation. 3. Transportation--Pennsylvania--Pittsburgh Metropolitan Area--Planning.

29883790 TLBAsc

URBAN TRANSPORTATION--TEXAS--HOUSTON--PLANNING.

HE
310
.H8
U67
1991

Uptown Houston comprehensive transportation strategy. -- Washington, D.C. : U.S. Dept. of Transportation : Distributed in cooperation with the Technology Sharing Program, U.S. Dept. of Transportation, [1991]
ii, 188 p. : ill. ; 28 cm.

1. Urban transportation--Texas--Houston--Planning. 2. Local transit--Texas--Houston--Planning. 3. Central business districts--Texas--Houston. 4. Traffic congestion--Texas--Houston.

28567941 TLBAsc

VISITORS, FOREIGN--UNITED STATES.

TL
725.3
.P3
U54
1991

United States. General Accounting Office.
International trade : easing foreign visitors' arrivals at U.S. airports : report to the Chairman, Subcommittee on Foreign Committee and Tourism, Committee on Commerce, Science, and Transportation, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : General Accounting Office, [1991]
28 p. : map ; 28 cm.

1. Visitors, Foreign--United States. 2. International airports--United States.

23474148 TLBAsc

ADMINISTRATIVE LAW REVIEW CONTENTS

Spring 1994, Volume 46, Number 2

Working Papers as Federal Records: The Need for New Legislation to Preserve the History of National Policy
Philip G. Schrag — 95

"Apotheosis of Mediocrity"?—The Rehnquist Court and Administrative Law
Bernard Schwartz — 141

Social Security Appeals in Great Britain
Nicholas J. Wikeley — 183

Delegation of Legislative Power to Agencies: A Comparative Analysis of United States and German Law
Uwe Kischel — 213

Better Roads

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOLUME 64, NO. 7, JULY 1994

FEATURES

BRIDGE INSPECTION: THE EQUIPMENT AND THE METHODS *17*
Facts about how Ohio and Idaho inspect their bridges.

HYDRAULICS LIFT 700-T OHIO BRIDGE *19*
Details of a unusual lifting project in Cincinnati.

USING SUSTAINABLE VEGETATION MANAGEMENT IN MAINE *21*
Clyde D. Walton describes Maine's conservative program.

SURVEY SHOWS MORE CAREFUL USE OF PESTICIDES *22*
Statistics from a national Gallup poll about roadside pesticide use.

ENVIRONMENTALLY SOUND VEGETATION MANAGEMENT *23*
Richard A. Johnstone describes a right-of-way program that DOTs can use.

INDIANA DOT SOLVES PROBLEMS WITH OVERCOATING *25*
Details of Indiana's program to overcoat its Vincennes Bridge with a calcium sulfonate/alkyd system.

HOW TO LIMIT THAW DAMAGE TO GRAVEL ROADS *27*
Hans Muntz describes the Ontario program to limit thaw damage of gravel roads.

CONTRACT MAINTENANCE — WHAT YOU NEED TO KNOW *29*
Results of a *Better Roads'* survey about how your peers use contract maintenance.

HOW TO CHOOSE BUCKET TEETH *31*
A quick look at facts to check when choosing bucket teeth.

HOW TO DEAL WITH ACTIVISTS WHO OPPOSE SPRAY PROGRAMS *32*
Garry Seitz discusses a county program for dealing with anti-spray activists.

ENGINE OVERHAULS: FACTS YOU NEED TO KNOW *34*
A review of the basics in getting ready for engine overhauls.

Boston College Environmental Affairs Law Review

Volume 21 Number 3

Articles

THE BUFFALO RIVER: A JURISPRUDENCE OF PRESERVATION
John W. Ragsdale, Jr. 429

WATERSHED MANAGEMENT: SLOGAN OR SOLUTION?
William Goldfarb 483

Comments

Recovery of Economic Losses Under the Massachusetts Oil and Hazardous Material Release Prevention and Response Act: Chapter 21E 511

Exhuming the Funeral Home Cases: Proposing a Private Nuisance Action Based on the Mental Anguish Caused by Pollution 557

Using the Abnormally Dangerous Activity Doctrine to Hold Principals Vicariously Liable for the Acts of Toll Manufacturers 587

ASCE CIVIL ENGINEERING
MAY 1994 VOLUME 64 NUMBER 5

CUS ON MATERIALS OF CONSTRUCTION

R STRETCH Stretched metal-membrane solar concentrators developed by civil eers may make electric power from the sun affordable at last.
g Schlaich, Rudolf Bergermann and Wolfgang Schiel 47

OSURFACING URBAN PAVEMENTS This European maintenance technique for asphalt ents was a big success in a test on a major arterial roadway in Toronto.
vid K. Hein, John J. Emery and Romualdo D'Ippolito 55

LAR EVOLUTION Modular steel bridges have come a long way since the l War II classics. *By Steven M. Shaker and Jeffrey H. Greenwald* 64

WEIGHT CONCRETE FOR A SEGMENTAL BRIDGE Once thought too expensive for ural use, certain aspects of lightweight concrete make it a bargain on the new ia-Martinez Bridge across San Pablo Bay, Calif.
n A. Murillo, Steve Thoman and Dennis Smith 68

ATURES

HANNEL TUNNEL: LARGER THAN LIFE, AND LATE Veterans of this megaproject look at what went wrong—and right. *By Virginia Fairweather* 42

D CONTROL VS. FLOOD MANAGEMENT As evidence from around the world piles up, ong can we pretend that floods can actually be controlled rather than accepted anaged? *By Philip B. Williams* 51

AGUE OF THEIR OWN New baseball parks in Cleveland and Arlington, Tex. showcase the lexities of modern stadium design and site planning. *By Paul Tarricone* 58

NECESSARY TO COMPROMISE ENGINEERING ETHICS TO REMAIN COMPETITIVE IN 's MARKETPLACE? Certainly not, says the winner of the 1993 Daniel W. Mead Essay st for Younger Members. *By D. Michael Mucha* 62

IMEDIA IN CIVIL ENGINEERING You've heard the word "multimedia" bandied about, ere's what it really stands for, what the systems can do and how they will change eering. *By Jorge A. Vanegas and Nelson C. Baker* 71

GINEERING NEWS

istic affordable housing ... the Pentagon to undergo billion-dollar rehab ... ozone-only -treatment plant ... composite canopy built "on the house" ... minipiles rescue processing ... smart-highway rehab in Illinois 11

EMPLOYEE RELATIONS LAW JOURNAL

1 **The Dunlop Commission: A Management Response** — *William J. Kilberg*

29 **Intermittent Leave and Reduced Leave Schedule: Traps for the Unwary under the Family and Medical Leave Act** — *Brian F. Jackson, Howard R. Flaxman*

47 **Romance in the Workplace: Should Employers Act as Chaperons?** — *Dean J. Schaner*

73 ***Hill v. NCAA*: California Adopts a New Standard for Invasion of Privacy** — *John F. Meyers*

85 **Sexual Harassment by Clients, Customers, and Suppliers: How Employers Should Handle an Emerging Legal Problem** — *Robert J. Aalberts, Lorne H. Seidman*

101 **Managing OSHA Compliance: The Human Resources Issues** — *Charles M. Chadd*

115 **Employment Litigation—Update on Recent Trends in the Law: After-Acquired Evidence, Fraudulent Joinder, and Alternative Dispute Resolution** — *Charles S. Misbkind, Louise B. Wright*

133 **Labor-Management Relations—Protecting Overweight Workers against Discrimination: Is Disability or Appearance the Real Issue?** — *Christopher J. Martin*

143 **Employee Benefits—Judicial Roundup: Two Recent Cases with Important Implications for Benefit Plans** — *Paul T. Shultz, Michael J. Langan, James G. Durfee*

153 **Safety and Health—Pragmatic Suggestions for Negotiating Reductions in OSHA Citations** — *Robert H. Sand*

161 **Review of the Literature—Employee Privacy and Arbitrating Discrimination Claims** — *James A. Burns, Jr.*

VOL. 20, NO. 1 SUMMER 1994

ITE JOURNAL

Volume 64, Number 6
June 1994

Articles

11 **Get to Know the Vice President Candidates**

13 **North Central Expressway: A Consensus Solution to the Longest Running Freeway Controversy**
By Jack Antebi, Cliff Franklin, Sharon Hodgkins and Terry Sams
Cooperation among public, private and community groups is helping to initiate transit and highway improvements on one of the nation's most controversial corridors. This is the second article in a series on Dallas, Texas, the host city of the 64th ITE Annual Meeting.

23 **The San Antonio ATMS: Innovation Tackles the Congestion Challenge**
By Vincent P. Pearce, Brian G. Keeler and J. André Schmid
The Texas Department of Transportation has undertaken an ambitious congestion control project by implementing an advanced traffic management system.

29 **Calibrating Travel Forecasting Models Using Census Speed Data**
By William W. Mann
Using census speed data offers a cost-efficient and credible source for calibrating travel forecasting models.

34 **Trip Generation Rates for Light Rail Transit Park-and-Ride Lots**
By Ekke A.G. Kok, John Morrall and Zoli Toth
The City of Calgary examines parking and traffic generation characteristics of existing park-and-ride lots to determine appropriate size and design for future lots.

42 **Macroscopic Delay Models for TSM Planners**
By K.N. Helali and Ata M. Khan
Macroscopic delay models developed at Carleton University are described and compared with NETSIM and HCM methodology using test cases.

ITE JOURNAL

Volume 64, Number 5
May 1994

Articles

16 **Get to Know the Vice President Candidates**

18 **International President's Message**
International President Marsha D. Anderson encourages transportation professionals to offer public service beyond the call of duty.

20 **Priority Ranking of Problem Intersections in Brooklyn, N.Y.**
By John C. Falcocchio, Robert M. Michel, Herbert S. Levinson and Solomon Assefa
A model was devised to produce comparable, quantifiable measures of problems to prioritize problem locations.

27 **Effect of Single vs. Double Line Parking Stall Markings**
By Paul C. Box
A study that compares how drivers position their vehicles in parking stalls might prove that single line parking stalls are more cost-efficient.

30 **A Few Thoughts**
By James L. Pline
1993 Marsh Award Winner Jim Pline discusses the future of the profession.

33 **The Integration of the Highway Capacity Manual and the TRAF-NETSIM Simulation Model**
By Ernest G. Athanailos
The combination of the Highway Capacity Manual (HCM) and the TRAF-NETSIM Simulation Model automates the procedures for the analysis of signalized intersections using the methodology in the HCM.

39 **Traffic Impact Analysis and Impact Fees in State Departments of Transportation**
By Soumya S. Dey and Jon D. Fricker
The purpose of the study was to develop a procedure for requesting, preparing and reviewing traffic impact studies for proposed developments.

46 **A Recommended Practice: Guidelines for Parking Facility Location and Design**
By ITE Technical Council Committee 5D-8
This recommended practice covers various parking guidelines, including new regulations under the Americans with Disabilities Act.

IVHS REVIEW
Intelligent Vehicle-Highway Society of America
Summer 1993

Table of Contents

Automated Control — Cornerstone of Future Highway Systems 1
Lyle Saxton

Is Anybody Listening to the Customer? 17
David G. Burwell

Colorado: Mountain and Prairie Lab for Rural IVHS 27
Matthew Reay, John Kiljan

IVHS and the Dismal Science 43
Thomas E. Marchessault

Japanese IVHS Looks to 2014 and Beyond 51
Sadayuki Tsugawa

Five Lessons for IVHS from Other Industries 65
Izrail Tsals, Ashok B. Boghani, John J. Greichen

Publications of Note 77

Commentary 85

Contributors 91

The Journal of Air Law and Commerce

VOLUME 59 MAY-JUNE 1994 NUMBER 4

TABLE OF CONTENTS

BOYLE UNDER SIEGE ..... *Colin P. Cahoon* 815

HIT AND RUN STRIKES—PROTECTED ACTIVITY OR SUICIDAL ACTIONS UNDER THE RAILWAY LABOR ACT? .... *Maureen F. Moore* 867

PANEL DISCUSSION

LITIGATION WITH A FOREIGN FLAVOR: A COMPARISON OF THE WARSAW CONVENTION AND THE HAMBURG RULES ..... *Chaired by Robert M. Jarvis and Michael S. Straubel* 907

COMMENTS

THE AMERICANS WITH DISABILITIES ACT: NEW CHALLENGES IN AIRLINE HIRING PRACTICES ..... *John A. Conway* 945

ASSAULT ON THE AIRLINE INDUSTRY: PRIVATE ANT'TRUST LITIGATION AND THE PROBLEM OF SETTLEMENT ..... *Amy Hunt* 983

THE AIRPORT NOISE AND CAPACITY ACT OF 1990: HAS CONGRESS FINALLY SOLVED THE AIRCRAFT NOISE PROBLEM? ..... *John J. Jenkins Jr.* 1023

Jane's Airport REVIEW
Incorporating *Aviation Ground Equipment Market*
ISSN: 0954 76 49 MAY 1994

NEWS

AIRPORTS
Passenger traffic figures; Denmark floats shares, Australia ponders sale 2
Diary; letters; news in brief 3

INDUSTRY
Industry contracts; share prices; 5
industry news 6

ATC
G-MATS wins Russian ATC order 6
European en-route costs under the spotlight; forecasts add to AAS pressure 9

NEW PRODUCT REVIEW
ATC airfield lighting; ATC meteorology; ATC communications; navaids; terminal operations; apron equipment 10

AIRPORTS

ENVIRONMENT
Congestion provides a toxic breeding ground 13

LOS ANGELES
Success in the struggle for self-determination 15

ABU DHABI
Al Ain's desert gamble 20

GROUND POWER UNITS
New emission laws will impact power supplies 23

Front cover: Who runs US airports? Los Angeles International is spearheading a campaign to take back the management of airport facilities from airlines and other groups. *See story p15*

EUROPE
Passengers add weight to case for open borders 25

INTERIOR DESIGN/CONSULTANTS
The importance of being blue 27

ATC

LANDING AIDS
FAA starts serious work on enhancing vision 28

HAZARDOUS WEATHER
Close watch on lightning keeps airport moving 30

INTERVIEW

PRESIDENT OF GATE (GERMAN AIRPORT TECHNOLOGY & EQUIPMENT)
Dieter Heinz 32

NEXT MONTH

The June issue will include the following features:

- **China and the Far East:** Financing the massive airport expansion programmes will involve large injections of capital. We look at how developments will be funded.
- **Optimising commercial operations:** A look at some of the ways airports are seeking to increase commercial revenues from shops, restaurants and other passenger facilities.
- **Civil aviation security:** A look at the threat and some of the technology airports will have to consider over the coming years.
- **Buyer's guide:** cargo-handling equipment.
- **ATC Human factors:** A look at the facilities available worldwide to civil aviation authorities as they seek new generations of controllers.

Summer 1994
JOURNAL OF THE AMERICAN PLANNING ASSOCIATION
Volume 60 • Number 3

ARTICLES

If Planning Includes Too Much, Maybe It Should Include More.....305
William H. Lucy

The Rational Locator: Why Travel Times Have Remained Stable.....319
David M. Levinson and Ajay Kumar

Public Real Estate Management and the Planner's Role.....333
Robert A. Simons

Perspectives on Mortgage Lending and Redlining.....344
Eugene D. Perle, Kathryn Lynch, and Jeffrey Horner

Supply-Side Analysis and Verification of Ridership Forecasts for Mass Transit Capital Projects.....355
Leroy W. Demery, Jr.

Journal of
Transportation Engineering
Volume 120 Number 3 May/June 1994

TECHNICAL PAPERS

New Methodology for Modeling Annual-Aircraft Emissions at Airports.
B. Gordon Woodmansey and Judith G. Patterson 339

Probabilistic Behavior of Pavements.
Kelvin C. P. Wang, John Zaniewski, and George Way 358

Estimation of Pavement-Layer Moduli using Nonlinear Optimization Technique.
Mustaque Hossain, John Zaniewski, and Subramaniam Rajan 376

Spalling of Continuously Reinforced Concrete Pavements.
Dan G. Zollinger, Sanjaya P. Senadheera, and Tianxi Tang 394

Simple Procedure for Identifying Pavement Distresses from Video Images.
Koon Meng Chua and Ling Xu 412

Neural Network for Gap Acceptance at Stop-Controlled Intersections.
Prahlad D. Pant and Purushothaman Balakrishnan 432

Evaluation Framework for IVHS.
Hong K. Lo, Arun Chatterjee, Frederick Wegmann, Stephen Richards, and Ajay K. Rathi 447

Advanced Continuum Traffic Flow Models for Congested Freeways.
Anastasios S. Lyrintzis, Ping Yi, Panos G. Michalopoulos, and Dimitrios E. Beskos 461

Alternative Approach to Estimation of Critical Cornering Speed.
John D. Leonard II 478

Journal of
Urban Planning and Development
Volume 120 Number 2 June 1994

TECHNICAL PAPERS

Concurrency-Management Practices in Florida: Comparative Assessment.
Greg Stuart 59

Community Partnering in Accelerated Construction Program.
Leslie R. Henley 74

Household Hazardous Wastes—Discard Patterns and Management Options.
Chris Zeiss 87

TECHNICAL NOTE

Model to Estimate Highway Earthwork Cost in Nepal.
Naresh Sthapit and Hiroshi Mori 498

DISCUSSIONS

Statistical Evaluation of Truck Overloads. Jamshid Mohammadi and Nadir Shah.
By Edward S. K. Fekpe. Closure by authors 506

Geometric Characterization of Road Humps for Speed-Control Design. T. F. Fwa and L. S. Tan.
By I. K. Lee and K. S. Li. Closure by authors 509

ERRATA 513

Journal of
Structural Engineering
Volume 120 Number 6 June 1994

Technical Papers

Integrated Analytical Procedure for Concrete Slabs under Impact Loads.
Ayaho Miyamoto, Michael William King, and Manabu Fujii 1685

Pointwise Equilibrating Polynomial Element for Nonlinear Analysis of Frames.
Siu Lai Chan and Zhi Hua Zhou 1703

Reinforced-Concrete Dimensioning Based on Element Nodal Forces.
E. Anderheggen, Z. Despot, P. Steffen, and S. M. R. Tabatabai 1718

Algorithm for Hysteresis Analysis of Prestressed-Concrete Frames.
Xiaozu Su and Bolong Zhu 1732

Applications of Field Testing to Bridge Evaluation.
Fred Moses, Jean Paul Lebet, and Rolf Bez 1745

Seismic Behavior of Open-Web Truss-Moment Frames.
Subhash C. Goel and Ahmad M. Itani 1763

Seismic-Resistant Special Truss-Moment Frames.
Subhash C. Goel and Ahmad M. Itani 1781

Confining Reinforcement for Concrete Columns.
S. Watson, F. A. Zahn, and R. Park 1798

Simulated Seismic Load Tests on Reinforced Concrete Columns.
S. Watson and R. Park 1825

Reliability of Short and Slender Reinforced-Concrete Columns.
Sonia E. Ruiz and J. Cipriano Aguilar 1850

Welded Wire Fabric for Bridges. I: Ultimate Strength and Ductility.
Bilal M. Ayyub, Peter C. Chang, and Naji A. Al-Mutairi 1866

Welded Wire Fabric for Bridges. II: Fatigue Strength.
Bilal M. Ayyub, Peter C. Chang, and Naji A. Al-Mutairi 1882

Buckling Strength of Wood Power Poles Using Finite Elements.
A. B. Peabody and J. W. Wekezer 1893

Nonlinear Analysis of Two-Layered Wood Members with Interlayer Slip.
Dan L. Wheat and Jose M. Calixto 1909

Discussions

Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers. Byung Hwan Oh.
By Bernard Espion. Closure by author 1932

Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis. A. K. H. Kwan.
By Bernardo Deschapelles. Closure by author 1934

Behavior of Two-Span Continuous Bridge under Truck Axle Loading. Jane L. Tiedeman, Pedro Albrecht, and Lloyd R. Cayes.
By Alex Aswad 1938

Errata 1940

Journal of
Structural Engineering

Volume 120 Number 5 May 1994

Technical Papers

Lateral-Load Analysis of Frame Stagings for Elevated Water Tanks.
Sajjad Sameer U and Sudhir K. Jain 1375

Collapse Loads of Continuous Skew Composite Bridges.
Alaa Helba and John B. Kennedy 1395

Parametric Study on Collapse Loads of Skew Composite Bridges.
Alaa Helba and John B. Kennedy 1415

Notional-Load Plastic-Hinge Method for Frame Design.
J. Y. Richard Liew, D. W. White, and W. F. Chen 1434

Lateral Stiffness of Frames and Effective Length of Framed Columns.
Ruhi Aydın and Hasan Gönen 1455

Cause of Deformed Shapes in Cooling Towers.
Jean-François Jullien, Waeil Aflak, and Yvan L'Huby 1471

Fire Resistance of Circular Steel Columns Filled with Bar-Reinforced Concrete.
T. T. Lie 1489

Rough Cracks Subjected to Earthquake Loading.
Joost Walraven 1510

Analysis of Concrete Construction Live Loads on Newly Poured Slabs.
Saeed Karshenas and Haitham Ayoub 1525

Survey Results for Concrete Construction Live Loads on Newly Poured Slabs.
Haitham Ayoub and Saeed Karshenas 1543

Flat Plates with Regular and Irregular Column Layouts. I: Analysis.
Kolbjorn Saether 1563

Flat Plates with Regular and Irregular Column Layouts. II: Numerical Evaluations.
Kolbjorn Saether 1580

Design Strengths of Cold-Formed Channels in Bending and Torsion.
K. T. Kavanagh and D. S. Ellifritt 1599

Fatigue-Reliability Evaluation of Steel Bridges.
Zhengwei Zhao, Achintya Haldar, and Florence L. Breen Jr. 1608

Fatigue-Reliability Updating through Inspections of Steel Bridges.
Zhengwei Zhao, Achintya Haldar, and Florence L. Breen Jr. 1622

Technical Notes

Behavior of Gypsum-Sheathed Cold-Formed Steel Wall Studs.
Thomas H. Miller and Teoman Pekoz 1644

Behavior of Deeply Corrugated Steel Plate in Culvert.
Alan F. Rauch, Shad M. Sargand, and Glenn A. Hazen 1651

Generating Reinforcement in FE Modeling of Concrete Structures.
Fariborz Barzegar and Srinivas Maddipudi 1656

Parametric Study of Axisymmetric Circular-Glass Plates.
C. V. Girija Vallabhan, Y. C. Das, and Manjunatha Ramasamudra 1663

Discussions

Accurate and Rapid Determination of Fatigue Damage in Steel Bridges. C. Hahin, J. M. South, J. Mohammadi, and R. K. Polepeddi.
By R. A. P. Sweeney and J. W. Fisher. Closure by C. Hahin, J. M. South, and J. Mohammadi 1674

Nonlinear Finite-Element Model for Light-Frame Stud Walls. B. Kasal and R. J. Leichti.
By Mostafiz R. Chowdhury. Closure by authors 1678

Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge. Shih Tom Chang.
By S. V. Narasimham. Closure by author 1681

Errata 1683

MBE
Minority · Business Entrepreneur

6 **Big-League Player**—Lou Jones shows that it's not just who you know, it's what you know how to do, that counts.

14 **Slow Dancing**—What is the Clinton Administration actually doing about minority business development?

21 **The Score on SCORs**—SCORs are not the investment panacea they might have been for smaller companies seeking growth capital from public sources.

25 **Different Drummers**—The sky's the limit for a toy manufacturer, a writing instrument company and a NASA contractor.

32 **Banking on Minority Business**—NationsBank expands its procurement program for minorities and women—with impressive results.

38 **Building a Competitive Edge**—Edison Electric Institute holds its 11th Annual Minority Business Development Seminar and Trade Fair, and issues its 1993 report on minority and women suppliers.

June1994

Railway Gazette

INTERNATIONAL

VOLUME 150 NUMBER 6
JUNE 1994

IHHA TARGETS ROLLING ASSETS 361
The International Heavy Haul Association mini-conference in Omaha will examine the latest developments in heavy haul traction and wagons

FLEET OPERATORS SEEK PRODUCTIVITY GAINS 363
Innovative designs and materials are being used by America's wagon-building giants in a customer-led search for productivity gains

FIVE-YEAR PLAN TO IMPROVE ORE LINE ECONOMICS 367
New locos, rolling stock and operating methods are envisaged under a joint accord between Swedish mining company LKAB, SJ and NSB to streamline iron-ore movements

AUTOMATIC UNCOUPLER COMPLETES AUTOMATION AT THE HUMP 371

PIGGYBACK TO GLASGOW FOR UNDER £70M 375
Carrying standard 4 m high road semi-trailers within Britain would be possible using novel designs of spine or pocket wagon if the loading gauge could be lifted on core routes

PBKA SETS PIONEER INTER-OPERABILITY ON FOUR NETWORKS 379
Due to enter service in 1997, the Paris - Brussels - Köln - Amsterdam TGVs posed major power collection and signalling challenges for the engineers of the four railways involved

JONCTION EXPANDS THE TGV PORTFOLIO 387
Opening of the 102 km TGV bypass line around Paris paves the way for a network of direct trains connecting French provincial cities, and international rail and air services

MADRID - BARCELONA IN 2 HOURS 30 MIN 393
Construction of two sections of Spain's second standard gauge high speed line is due to start at the end of the year

SPEEDRAIL SEEKS SUPPORT WHERE VFT FAILED 397

TILTING TRAINS CONTINUE TO GAIN GROUND 401

PLASSER PREMIERES JUMBO SUCKER 403

UEEIV CONGRESS PULLS IN EUROPE'S ENGINEERS 403

DIGITAL COMMUNICATIONS UPGRADE LU ANNOUNCEMENTS 405

PRODUCT NEWS 407
DIARY 410
PUBLICATIONS 410

May 1994

Railway Gazette

INTERNATIONAL

VOLUME 150 NUMBER 5
MAY 1994

FRA SEEKS HIGH SPEED PARTNERSHIPS 291
Jolene Molitoris became the first woman to take charge of the US Federal Railroad Administration in 1993. A firm believer in high speed rail, she told Richard Hope that financing must be shared by the public and private sectors

IRON HIGHWAY TESTS PROVE INTEGRAL TRAIN CONCEPT 295
Trials with the Iron Highway prototype at the AAR Test Center in Pueblo have validated the train's unique concepts. Aimed at the US short haul market which railways have practically abandoned to trucks, its novel technology offers cost and quality incentives to entice truckers to switch to rail

METRA BUILDS COMMUTER SERVICE ON QUALITY 301
Punctuality and comfort are what Chicago's downtown workforce demands – and gets – as more of them abandon their cars in favour of riding the train to the Loop

DASH 9 AND AC4400 OFFER HIGHER PRODUCTIVITY 307
Two demonstrators rolled out by General Electric promise lower life costs and higher productivity

EXPORAIL HIGHLIGHTS CALIFORNIA'S RAIL RENAISSANCE 313

BART FARE COLLECTION TO EARN A RETURN 315
Automated fare collection with open hardware and software will pay for itself through greater reliability, higher security and better management information

TOTAL TRAVEL REPLACES FARE COLLECTION 319
Technology offers the ability to hone crude yield management techniques; Roger Ford explores the latest revenue collection methods

E-ZROSTAR TICKETING RELIES ON PROVEN HARDWARE 319

JUBILEE EXTENSION TRIES TOUCH SCREENS AND ELECTRIC GATES 320

RAILTECH TO EXAMINE TECHNICAL ADVANCES 323

PRODUCT NEWS 329
DIARY 332
PUBLICATIONS 332

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 32/NO. 5 MAY 1994

FEATURES

30 Another rubblizing project wins NAPA's highest honor
Night and weekend work under heavy traffic characterizes Raleigh Beltway project; work by C.C. Mangum profiled in field article in this magazine in 1992

32 A/E/C Systems computer show bound for Washington D.C.
'Building the Future' theme of 15th annual computer and management show for design, construction industry; Autodesk, Intergraph to hold simultaneous exhibitions

34 Batch plants no guarantee to consistent quality mixes
Whether it's a batch or drum mix plant, the key to a quality mix is found at the cold-feed bin stage; don't depend on gradation screens to bail you out

38 Tax program, new freeways break Bay area gridlock
Billion dollar highway improvements free-up Santa Clara County commuters; New freeways established; partnering program a model for 17 California counties

40 County blazes new pavement trail with polymer modified asphalt
Cass County (Mich.) Road Commission builds on progressive reputation with use of polymer modified asphalt; thinner lifts, stronger pavements to save money

42 Composite foot bridge to be first of it's kind in U.S.
(This article is reprinted from the April 1994 regional edition of *Roads & Bridges*)

48 Denver upgrades arterial streets, intersections to rigid pavement
City focuses on intersections to fight rutting and shoving by buses and trucks; some intersections are enhanced with brick pavers in patterns or crosswalks

48 Specifier's Guide to Asphalt Modifiers

54 Should paving contractors seek publicity for efforts?
In a word, no; but contractors can benefit by using unique events to bring exposure to road building, and should have a crisis management plan for disasters

60 Pennsylvania road embankments stabilized using PCC slabs
Cut-up slabs of aged portland cement concrete from road reconstruction are recycled as slope stabilizers, stacked, and backfilled with stone

74 ATSSA show channels new safety devices onto roadways
'Safety First'—for both motorists and traffic control pros—emphasized at 24th ATSSA Traffic Expo; industry vendors uncover latest safety equipment

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 32/NO. 6 JUNE 1994

FEATURES

30 County's massive gravel trucks do double duty in snow
Morton County, in North Dakota, gets winter motor grader performance by attaching wing plows to its heavy trucks; changeover takes a day

32 Pittsburgh's lenticular trusses get structural renovation plans
Engineering software employing finite element analysis (FEA) method, extensive modeling and dynamic analysis is used to plan renovations to historic trusses

36 Corrosion, environmental impacts key when assessing deicer alternatives
Deicer alternatives from calcium chloride to CMA are profiled in presentation at North American Snow Conference; low temperature ice melting abilities considered

40 Liquid anti-icing 'hot' topic among continent's snowfighters
34th North American Snow Conference reveals potential for liquid anti-icing as winter road maintenance weapon; prevents ice-pavement bond

46 Got an innovative product? HITEC may speed acceptance
Highway Innovative Technology Evaluation Center (HITEC) will help break bottlenecks in approval/specifying process; boon to agencies and manufacturers

Week of June 20, 1994

THE TRANSPORTATION AND LOGISTICS WEEKLY

TRAFFIC WORLD

No. 12, Vol. 238, Whole No. 4546

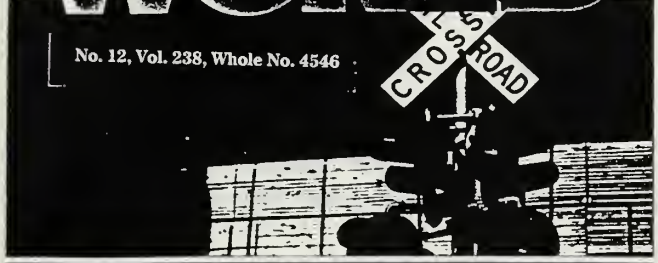


Table of Contents

COVER
NHS weight standards opposed 12
Senate airport bill criticized 14
Supporters defend ICC 17
Maritime strike feared at APL 18

WATER
Shipowners' liability clarified 23
Danish shippers accuse TAA 24
Rational dredging policy urged 25
Philadelphia skips FastShips 25

MOTOR
New "Redbook" rates brokers 29
Study eyes "peak-period" fees 30
Arrest in truck insurance scam 31
Joseph E. Keller obituary 31

RAIL
Strike looms at Soo Line 32
ICC may preempt Sanders bill 33
SP, IC intermodal deal 34
C&NW to expand coal line 34
Anschutz to sell SP stock 34
TTX pooling deal extended 35

AIR
Forwarders' Vietnam deals 37
New Southern Africa service 37
International Air Cargo Conference 38
Atlas lures TWA executive 38
More cuts at Delta 39
Briefs 39

INTERNATIONAL
Eastern Europe roadbuilding 40
CN's Q1 intermodal service 41
UPS service to Myanmar 42
Briefs 42

TECHNOLOGY
Rules changing on refrigerants 43
Briefs 44
Software analyzes railroads 45

DEPARTMENTS
ICC Digest of Orders 46
Q&A 47
Personal News 49
Update 51
Market Report 52

Week of June 27, 1994

THE TRANSPORTATION AND LOGISTICS WEEKLY

TRAFFIC WORLD

INTERSTATE COMMERCE COMMISSION

Table of Contents

No. 13, Vol. 238, Whole No. 4547

COVER

Lobbyists circle dereg part of AIP.....12
Blame placed in Amtrak crash 14
Landry resigns as ATA head.....15
RLA doesn't preempt state law.....15
Trash hauling bill introduced.....16
AT&T wins tariff-filing case.....16

WATER

NVOCC owner may face prison 20
FMC investigates TOP's pricing 20
Houston gets ISTEA funds.....21
Philly commits to FastShip.....22
Court rules against dockworkers 22

RAIL

Scheduled rail system in offing? 23
APL Distribution moves to Chicago..24
UTU claims victory in LIRR strike....25
Rail Tons.....25
CSXI privatizes trailers.....26

MOTOR

Ton-mile tax study recommended....41
Shippers file on Transcon case.....42
RPS adds 43 facilities 42
EDS, Quick Fuel sign deal.....43
NITL condemns bureau plan.....43
Central goes intrastate in Ark. 43
ICC lets Kentucky join plan 44
Bar group to survey enforcement. 44
Court upholds Teamsters.....44
Briefs.....44

AIR

FedEx changes brand name, logo.....46
NITL seek air carrier support.....47
IATA chief see modest recovery.....47
FedEx posts yearly volume gain 48
Briefs.....48

TECHNOLOGY

Tanker offers super temp control 49
NTSB advocates train controls 50
Illinois Tollway goes electronic.....51

DEPARTMENTS

Letters 52
ICC Digest of Orders 54
Personal News.....56
Update 58
Market Report 59

TRANSPORTATION QUARTERLY

Volume 48, Number 2 Spring 1994

Table of Contents for Spring 1994

Editorial 105

Delays at Toll Booths — Why Stand in Line?. 107
DENOS C. GAZIS AND RALPH E. GOMORY

Congestion Relief Toll Tunnels. 115
ROBERT W. POOLE, JR. AND YUO SUGIMOTO

Implications of NAFTA on the Transportation Industry 135
MICHAEL P. RHOADES

What Happened to Peoria? Ten Years of Airline Deregulation 149
RICHARD M. PECK

Comparative Rankings of Highway Systems: Can We, Should We?. 163
DAVID T. HARTGEN

Paratransit Computer Dispatch and Scheduling: An Application of Advanced Public Transportation Systems 173
JOHN R. STONE, ANNA M. NALEVANKO, AND GORMAN GILBERT

Factors Affecting the Trip to Church. 185
GARY SANDS AND SUE MARX SMOCK

In Footsteps of a Giant: Francis C. Turner and Management of the Interstate. 199
DAVID C. OLIVER

TRIAL

Volume 30, No. 6 June 1994

Negotiation and Settlement

16 **The Price of Silence**
James L. Gilbert, Francis H. Hare, Jr., and Stuart A. Ollanik

Potentially deadly secrets lie sealed on the shelves of courtrooms across the country. Victims are pressured to buy justice with silence, leaving other consumers in the lurch. Courts must make secrecy orders the rare exception rather than the norm.



22 **How to Improve the Summary Jury Trial**
Thomas B. Metzloff

Controversial procedural shortcuts are the hallmarks of summary jury trials. If they were voluntary and binding, they might be more popular and effective.

28 **Creating the Right Settlement Environment**
Windle Turley

Most cases are settled, and thorough preparation is essential before negotiation. The best way to speed settlement is to get ready for trial.

34 **A Safe Alternative to Structured Settlements**
Richard G. Halpern

Annuities are a great vehicle for structured settlements—if the insurance company doesn't fail. Settlement fund management trusts can protect assets.

36 **Tax Strategies Can Increase the Value of Settlements**
Keith Isleib and James R. Kahn

The best outcome for the victim requires that the settlement be structured to avoid future tax liability.

40 **Nonbinding Mediation of Employment Disputes**
Robert B. Fitzpatrick

Clients should be able to resolve their legitimate claims as promptly as possible. Lawyers must consider ways to speed up the process so clients don't feel exhausted when they reach the finish line. Mediation sometimes fills the bill.



TUNNELS & TUNNELLING

MAY 1994 VOL 26 NO 5

Comment 5

World News 9, 10, 11, 13, 15, 16

A quarter century of innovation and change 21
UK TUNNELLING *Colin Mackenzie, AMEC, chairman of the British Tunnelling Society, surveys the UK tunnelling scene over the past 25 years and comments on the variety of projects constructed and the technology developed.*

Twenty-five years on: the American approach 29
US TUNNELLING *America has witnessed significant changes in practice and technology during the lifetime of* ***Tunnels & Tunnelling****. Richard J Robbins, president of The Robbins Company, looks at tunnelling developments in the United States, drawing parallels with other parts of the world.*

The changing face of the TBM 35
TBM DEVELOPMENT *While hard rock TBMs have got bigger and more powerful, the development of slurry and earth pressure balance machines for safe tunnelling in soft ground has been the big breakthrough in the last 25 years. Richard Lewis, Director of Tunnelling for Markham, brings us this review.*

It's all change at Cologne 41
GERMANY *Peter Darling, The Editor, reports on a visit to Cologne, where an underground connection is being built to link the tram system with the urban rail network, thus ameliorating the traffic conditions in the city.*

Business & Finance 51

The small revolution 54
MICROTUNNELLING *Steve Orchard, Director of Euro Iseki, explores the evolution of this non-disruptive technology and voices his hopes for its future.*

Twenty-five years of NATM: a UK perspective 61
SUPPORT *Although continually exciting controversy about its origins and attribution, the 'method' or 'philosophy' known as the New Austrian Tunnelling Method is increasingly being employed. Peter Murphy and Tony Deane of Mott MacDonald trace its origins, with particular reference to the UK.*

Contracts & Orders 68

The medium is the message 71
CHANNEL TUNNEL *A feat of civil engineering par excellence and a symbol for our troubled times, the fixed link crossing of La Manche has at last realised the dream of centuries, writes Jack Lemley, past head of contractor TML.*

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116

BOSTON MA AUG 02'94 PB METER 7008230 $0.75 U.S. POSTAGE

Leonard Adams-Gov. Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS.STL 1.3:1994/4

GOVERNMENT DOCUMENTS
COLLECTION

OCT 19 1994

University of Massachusetts
Depository Copy

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISTIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

July • August • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

AIR--POLLUTION--MASSACHUSETTS--MEASUREMENT.

TD
883.5 .M4 M375 1993
Massachusetts 1990 base year emission inventories : volatile organic compounds, nitrogen oxides, carbon monoxide. -- Boston, Mass. : Massachusetts Dept. of Environmental Protection, Bureau of Waste Prevention, Division of Air Quality Control, 1993.
1 v. (various pagings) : ill. ; 28 cm.

1. Air--Pollution--Massachusetts--Measurement. 2. Carbon monoxide. 3. Air quality management--Massachusetts.

30575305 TLBAsc

AIR QUALITY MANAGEMENT.

TD
886.5 .C72 C74 1993
Crawford, Jason A.
A critical analysis of sketch-planning tools for evaluating the emission benefits of transportation control measures / by Jason A. Crawford and Raymond A. Krammes. -- College Station, Tex. : Texas Transportation Institute ; [Springfield, VA : Available through the National Technical Information Service, 1993]
xiii, 99 p. : ill., map ; 28 cm. -- (Research report / Texas Transportation Institute ; 1279-5)
STRN: FHWA/TX-92/1279-5
1. Traffic regulations--Environmental aspects--Forecasting. 2. Transportation--Planning. 3. Air quality management. 4. Motor vehicles--Motors--Exhaust gas.
30592306 TLBAsc

AIRPLANES--CERTIFICATION--UNITED STATES.

TL
671.1 .M42 A37 1993
Mead, Kenneth M.
Aircraft certification : FAA can better meet challenges posed by advances in aircraft technologies : statement of Kenneth M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Subcommittee on Aviation, Committee on Public Works and Transportation, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
11, [2] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-94-53)

29248992 TLBAsc SEE NEXT CRD

AIRPLANES--PILOTING.

TL
712 .U54 A94 1993
United States. General Accounting Office.
Aviation safety : FAA can better prepare general aviation pilots for mountain flying risks : report to the Chairman, Subcommittee on Aviation, Committee on Commerce, Science and Transportation, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
68 p. : maps ; 28 cm.

29602480 TLBAsc SEE NEXT CRD

AIRPORTS--UNITED STATES--FINANCE.

HE
9787.4 .F5 A385 1993
United States. General Accounting Office.
Airport improvement program : better management needed for funds provided under letters of intent : report to the Chairman, Subcommittee on Transportation and Related Agencies, Committee on Appropriations, U.S. Senate / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1994]
24 p. ; ill. ; 28 cm.
1. Airports--United States--Finance. 2. Airports--Government policy--United States. 3. United States. Federal Aviation Administration--Rules and practice--Evaluation.
29915766 TLBAsc

AMTRAK--FINANCE.

HE
2791 .A3 M422 1994
Mead, Kenneth M.
Amtrak : deteriorated financial condition and costly future challenges : statement of Kenneth M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1994]
25, [2] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-94-145)
1. Amtrak--Finance. 2. Amtrak--Appropriations and expenditures.
30456248 TLBAsc

AMTRAK--FINANCE.

HE
2791 .A3 M423 1994
Mead, Kenneth M.
Amtrak : financial condition has deteriorated and future costs make recovery difficult : statement of Kenneth M. Mead, Director, Transportation Issues, Resources, Community, and Economic Development Division, before the Subcommittee on Transportation, Committee on Appropriations, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1994]
25, [2] p. : ill. ; 28 cm. -- (Testimony ; GAO/T-RCED-94-155)
1. Amtrak--Finance. 2. Amtrak--Appropriations and expenditures.
30055663 TLBAsc

ARCHITECTURE AND THE PHYSICALLY HANDICAPPED--UNITED STATES.

REF.
Oversize NA 2545 .P5 K42 1992
Kearney, Deborah S.
The new ADA : compliance and costs / Deborah S. Kearney. -- Kingston, MA : R.S. Means Co., c1992.
xv, 453 p. : ill. ; 29 cm.
ISBN 0-87629-289-9

1. Architecture and the physically handicapped--United States. 2. United States. Americans with Disabilities Act of 1990.

26737277 TLBAec 93-163293

AUTOMOBILE PARKING--RATES.

HE
336
.P37
S56
1992

Shoup, Donald C.
Cashing out employer-paid parking : final report / prepared by Donald C. Shoup. -- Washington, DC : Federal Transit Administration, Office of Technical Assistance and Safety ; Springfield, Va. : Available through the National Technical Information Service, [1992]
141, [9] p. : ill. ; 28 cm.

1. Commuting. 2. Automobile parking --Rates. 3. Employee fringe benefits. 4. Employer-sponsored transportation.

28318419 TLBAsc

BRIDGES, STEEL PLATE DECK--EVALUATION.

TG
416
.E92
1992

Evaluation of wearing surface systems for orthotropic steel-plate-bridge decks / by Vellore S. Gopalaratnam ... [et al.]. -- [Jefferson City, Mo.] : Missouri Highway and Transportation Dept., [1992?]
vii, 64 p. : ill. ; 28 cm. -- (Report / Missouri Cooperative Highway Research Program ; 89-2)

1. Bridges, Steel plate deck--Evaluation. 2. Bridges--Floors--Evaluation. 3. Bridges--Floors--Maintenance and repair.

28971100 TLBAsc

BRIDGES--MAINTENANCE AND REPAIR--MANAGEMENT.

TG
315
.A43
G84
1993

American Association of State Highway and Transportation Officials.
Guidelines for bridge management systems. -- Washington, D.C. : American Association of State Highway and Transportation Officials, c1993.
32 p. : ill. ; 28 cm.

1. Bridges--Maintenance and repair--Management.

28491291 TLBAsc

BRIDGES--TEXAS--MAINTENANCE AND REPAIR.

TG
315
.P76
1993

A Proposed bridge management system implementation plan for Texas / by Ray W. James ... [et al.] ; sponsored by the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, U.S. Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 135 p. : ill ; 28 cm. -- (Research report ; 1259-1F)
SIRN: FHWA/TX-92/1259-1F
1. Bridges--Texas--Maintenance and repair. 2. Bridges--Texas--Maintenance and repair--Management.

28481894 TLBAsc

BRIDGES--MAINTENANCE AND REPAIR--MANAGEMENT--DATA PROCESSSING--CONGRESSES.

IG
315
.B747
1993

Bridge management for transportation agencies : preprints. -- [Washington, D.C. : Transportation Research Board, National Research Council?, 1993]
1 v. in various paginge : ill. ; 28 cm.

1. Bridges--Maintenance and repair--Management--Data processsing--Congresses.

29554391 TLBAsc

CHANNELS (HYDRAULIC ENGINEERING)

TC
175
.C52
063
1993

Chaudhry, M. Hanif.
Open-channel flow / M. Hanif Chaudhry. -- Englewood Cliffs, N.J. : Prentice-Hall, 1993.
xii, 483 p. : ill. ; 24 cm. + 1 computer diek (5 1/4 in.).
ISBN 0-13-637141-8

1. Channels (Hydraulic engineering) 2. Hydrodynamics.

26096204 TLBAsc 92-22564r93

BRIDGES--OHIO--DESIGN AND CONSTRUCTION.

TE
213
.B73
D47
1992

Brewer, William E.
The design and construction of small span bridges and culverts using controlled low strength material (CLSM) / by William E. Brewer. -- Ada, Ohio : College of Engineering, Ohio Northern University ; Springfied, Va. : Available to the public through the National Technical Information Service, 1992.
1 v. (various pagings) : ill. ; 28 cm.
SIRN: FHWA/OH-93/014

1. Bridges--Ohio--Design and construction. 2. Culverts--Ohio.

28530078 TLBAsc

CHARLES RIVER (MASS.)--BRIDGES--DESIGN AND CONSTRUCTION.

HE
379
.B7i
I563
1993

Charles River crossing : final supplemental environmental impact statement/report ; Central Artery/ Tunnel Project. -- [Boston, Ma] : Federal Highway Administration : Massachusetts Highway Department, [1993.]
2 v. : ill., maps, plans ; 28 cm.

29823483 TLBAsc SEE NEXT CRD

CHOICE OF TRANSPORTATION.

HE
369
.W32
P64
1993

Wachs, Martin.
Policy implications of recent behavioral research in transportation demand management / Martin Wachs. -- Berkeley, Calif. : University of California Transportation Center, [1993?]
p. [333]-341 ; 28 cm. -- (Reprint / University of California Transportation Center ; no. 165)

1. Urban transportation--Management. 2. Automobile drivers--Attitudes. 3. Automobile drivers--Psychology. 4. Choice of transportation.

30434831 TLBAsc

FEDERAL AID TO TRANSPORTATION- UNITED STATES.

KF
26
.E6
1993

United States. Congress. Senate. Committee on Environment and Public Works.
Implementation of the Intermodal Surface Transportation Efficiency Act of 1991 : hearing before the Committee on Environment and Public Works, United States Senate, One Hundred Second Congress, second session, December 18, 1992. -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1993.
iii, 153 p. : ill. ; 23 cm. -- (S. hrg. ; 102-1005)
ISBN 0-16-040066-X

28012636 TLBAsc SEE NEXT CRD

DRINKING AND TRAFFIC ACCIDENTS--UNITED STATES--STATISTICS.

HE
5620
.D65
I52
1992

The Incidence and role of drugs in fatally injured drivers / [K.W. Terhune ... et al.]. -- [Washington, D.C.] : U.S. Dept. of Transportation, National Highway Traffic Safety Administration ; Springfield, Va. : Available through the National Technical Information Service, [1992]
235 p. in various pagings : ill., map ; 28 cm.
STRN: DOT HS 808 065

1. Drinking and traffic accidents--United States--Statistics. 2. Automobile drivers--United States--Drug use--Statistics.

29871136 TLBAsc

GREENHOUSE GASES--GOVERNMENT POLICY--UNITED STATES.

KF
26
.E55
1993

United States. Congress. Senate. Committee on Energy and Natural Resources.
National action plan for reducing greenhouse gas emissions : hearing before the Committee on Energy and Natural Resources, United States Senate, One Hundred Third Congress, first session .... -- Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1993-
v. : ill. ; 24 cm. -- (S. hrg. ; 103-276)
ISBN 0-16-041782-9 (pt.1)

29452006 TLBAsc SEE NEXT CRD

ENGINEERING--VOCATIONAL GUIDANCE.

HE
131
.T687n
no.360

Carter, Everett C.
Professional development of maintenance engineers and managers / E.C. Carter, M.E. Shaw, and J.E. Garmong. -- Washington, D.C. : National Academy Press, 1994.
52 p. ; 28 cm. -- (National Cooperative Highway Research Program report ; 360)
ISBN 0-309-05358-7

1. Engineering--Vocational guidance. 2. Engineers. 3. Roads--Maintenance and repair.

30488264 TLBAsc 93-61363

HAZARDOUS SUBSTANCES--UNITED STATES--TRANSPORTATION.

T
55.3
.H3
I734
1991

United States. General Accounting Office.
Transportation safety : information strategy needed for hazardous materials : report to the Chair, Subcommittee on Government Activities and Transportation, Committee on Government Operations, House of Representatives. -- Washington, D.C. : U.S. General Accounting Office, [1991]
18 p. ; 28 cm.
1. Hazardous substances--United States--Transportation. 2. Hazardous substances--United States--Accidents. 3. Hazardous substances--Safety regulations--United States.

24709021 TLBAsc

EXPRESS HIGHWAYS--ECONOMIC ASPECTS--NORTH CAROLINA.

HE
554
.W83
1991

Bartgen, David T.
I-40 economic impact study : impact of Interstate 40 on the Port of Wilmington / by David T. Hartgen and Michael A. McAdams. -- Charlotte, N.C. : University of North Carolina at Charlotte, Department of Geography and Earth Sciences, [1991]
73 p. in various pagings : ill. ; 28 cm. -- (Transportation publication report ; no. 49)
1. Express highways--Economic aspects--North Carolina. 2. Marine terminals--Economic aspects--North Carolina--Wilmington. 3. Harbors--North Carolina--Wilmington--Access.

27427252 TLBAsc

HIGHWAY COMMUNICATIONS--WASHINGTON (STATE)--BELLEVUE.

TE
228.3
.P53
B44
1993

Pieratti, Denise.
Bellevue Smart Traveler and cellular telecommunications / Denise Pieratti, Mark Baselkorn, and Cathy Blumenthal (Bellevue Transportation Management Association). -- Washington, DC : U.S. Dept. of Transportation, Federal Transit Administration, Office of Technical Assistance [and Safety] : Distributed in cooperation with Technology Sharing Program, [1993]
44, [22] p. : forms ; 28 cm.
1. Highway communications--Washington (State)--Bellevue. 2. Ridesharing--Washington (State)--Bellevue--Communication systems. 3. Commuting--Washington (State)--Bellevue. 4. Cellular radio.

29180454 TLBAsc

HIGHWAY DEPARTMENTS--NORTH DAKOTA.

TE
24
.N9
D66
1988

Dooley, Frank J.
A comprehensive review and the proposed reorganization of North Dakota state government transportation agencies / by Frank J. Dooley. -- Fargo, N.D. : Upper Great Plains Transportation Institute, North Dakota State University, [1988]
v, 186 p. ; 28 cm. -- (UGPTI report ; no. 65)

1. Administrative agencies--North Dakota--Reorganization. 2. Highway departments--North Dakota. 3. Transportation and state--North Dakota.

19844904 TLBAsc

HIGHWAY RESEARCH--UNITED STATES--EVALUATION.

TE
192
.G74
E53
1994

Griffin, Lindsay I.
Engineers' guide to program and product evaluation / [Lindsay I. Griffin]. -- Washington, D.C. : Federal Highway Administration, [Office of Technology Applications ; Springfield, Va. : Available through the National Technical Information Service, 1994]
v, 83 p. : charts ; 28 cm.
STRN: FHWA-SA-93-028

1. Highway research--United States--Evaluation. 2. Transportation--United States--Technological innovations. 3. United States. Federal Highway Administration.

30321884 TLBAsc

INSURANCE--UNITED STATES--DIRECTORIES.

REF.
HG
8765
.B47

Best's key rating guide: property-casualty. 70th- ed.; 1976-
Oldwick, N.J., A. M. Best Co.
v. 21 cm.
Annual.
Continues: Best's key rating guide. Property-liability ISSN 0731-5546.
Key title: Best's key rating guide. Property-casualty, ISSN 0148-3064

1. Insurance--United States--Directories.

2922115 TLBAsc 77-642327r85

INTELLIGENT VEHICLE HIGHWAY SYSTEMS.

HE
131
.T687c
no.412

Shuman, Valerie.
Primer on intelligent vehicle highway systems / prepared by Valerie Shuman ; sponsored by Committee on Intelligent Vehicle Highway Systems ... in cooperation with IVHS America. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
58 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 412)

1. Highway communications. 2. Intelligent Vehicle Highway Systems.

28930662 TLBAsc

INTELLIGENT VEHICLE HIGHWAY SYSTEMS--RESEARCH--UNITED STATES.

TE
228.3
.I93
1994

IVHS architecture development program : interim status report / Department of Transportation, United States of America [and] IVHS America. -- [Washington, D.C.] : Federal Highway Administration : IVHS America, [1994]
iv, 73, [10] p. : ill. ; 28 cm.

1. Intelligent Vehicle Highway Systems--Research--United States. 2. Highway communications--Research--United States. 3. System design.

30440441 TLBAsc

LAND USE, URBAN--CALIFORNIA--LOS ANGELES.

HT
175
.L68
R47
1993

Loukaitou-Sideris, Anastasia.
Retrofit of urban corridors : land use policies and design guidelines for transit-friendly environments / Anastasia Loukaitou-Sideris. -- Berkeley, Calif. : University of California Transportation Center, [1993]
60 p. : ill., maps ; 28 cm. -- (Working paper / University of California Transportation Center ; no. 180)
1. Streets--California--Los Angeles--Design and construction. 2. Urban transportation--California--Los Angeles--Planning. 3. City planning--California--Los Angeles. 4. Land use, Urban--California--Los Angeles.

20 JUN 94 30455626 TLBAsc

LOCAL TRANSIT--FIRES AND FIRE PREVENTION.

TF
610
.B37
D48
1992

Barnett, Jonathan K.
Development of analytical techniques for risk management training / [Jonathan K. Barnett]. -- Washington, D.C. : Federal Transit Administration, Office of Technical Assistance and Safety ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
viii, 60 p : ill. ; 28 cm.
SIRN: FTA-MA-11-0050-92-1
1. Subways--Fires and fire prevention. 2. Local transit--Fires and fire prevention. 3. Risk assessment. 4. Local transit--Fires and fire prevention--Risk assessment.

27174983 TLBAsc

LOCAL TRANSIT--PLANNING--GOVERNMENT POLICY--UNITED STATES--EVALUATION.

HE
4351
.U54
T72
1992

United States. General Accounting Office.
Transportation infrastructure : urban transportation planning can better address modal trade-offs : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
36 p. : ill. ; 28 cm.

25648003 TLBAsc SEE NEXT CRD

LOCAL TRANSIT--UNITED STATES--
CONTRACTING OUT.

HE
4351.2
.P76
1992

Privatization of public transit
services / by ITE Technical Council
Committee 6A-41. -- [Washington,
D.C.] : Institute of Transportation
Engineers, c1992.
p. 29-33 ; 28 cm. -- (ITE publication
; no. IR-061)

1. Local transit--United States--
Contracting out. 2. Privatization--
United States.

TLBAsc

LOCAL TRANSIT--UNITED STATES--
FINANCE--PERIODICALS.

HE
4351
.R46

Report on funding levels and
allocations of funds : report of the
secretary of transportation to the
United States Congress pursuant to
section 3(j) of the Urban Mass
Transportation Act of ..., as amended
/ U.S. Department of Transportation,
Urban Mass Transportation
Administration. -- [Washington, D.C.]
: The Administration,
v. ; 28 cm.
Annual.

1. Local transit--United States--
Finance--Periodicals.

22754300 TLBAsc 90-641186

MASSACHUSETTS BAY TRANSPORTATION
AUTHORITY--COMMUTER RAIL--WORCESTER
BRANCH--PLANNING.

HE
2781
.B757
P786
1993

Worcester commuter rail extension
project : Draft environmental impact
report / prepared for Massachusetts
Bay Transportation Authority ;
prepared by Edwards Kelcey, Inc. --
Boston, Mass. : Edwards and Kelcey,
1993
2 v. : ill., maps, plans ; 28 cm.
1. Local transit--Massachusetts--
Boston Metropolitan Area--Planning. 2.
Massachusetts Bay Transportation
Authority--Commuter rail--Planning. 3.
Massachusetts Bay Transportation
Authority--Commuter rail--Worcester
Branch--Planning.

TLBAsc

MEDIAN STRIPS--EVALUATION.

TE
228.2
.B34
E92
1993

Balke, Kevin N.
An evaluation of flush medians and
two-way, left-turn lanes on four-lane
rural highways / by Kevin N. Balke and
Kay Fitzpatrick. -- College Station, TX
: Texas Transportation Institute ;
[Springfield, VA : Available through
the National Technical Information
Service, 1993]
xi, 39 p. : ill. ; 28 cm. --
(Research report / Texas Transportation
Institute ; 1293-1)
SIRN: FHWA/TX-94/1293-1
1. Median strips--Evaluation. 2.
Left-turn lanes--Evaluation. 3. Rural
roads--Design and construction--
Evaluation.

30604225 TLBAsc

MEDIAN STRIPS--TESTING.

TE
228.2
.B43
D483
1993

Beason, W. Lynn.
Development of a limited-slip
portable concrete barrier connection /
by W. Lynn Beason and D. Lance Bullard,
Jr. -- College Station, Tex. : Texas
Transportation Institute, Texas A & M
University System ; [Springfield, Va. :
available through NTIS, 1993]
xvii, 123 p. : ill. ; 28 cm. --
(Research report ; 1958-1)

1. Median strips--Testing. 2. Roads
--Maintenance and repair--Safety
measures. 3. Traffic safety.

30503172 TLBAsc

MOTOR FUELS--GOVERNMENT POLICY--
UNITED STATES.

TD
886.5
.U54
A47
1993

United States. General Accounting
Office.
Alternative-fueled vehicles :
potential impact of exemptions from
transportation control measures :
report to the Chairman, Subcommittee on
Energy and Power, Committee on Energy
and Commerce, House of Representatives
/ United States General Accounting
Office. -- Washington, D.C. : The
Office ; Gaithersburg, MD (P.O. Box
6015, Gaithersburg 20884-6015) : The
Office [distributor, 1993]
34 p. : form ; 28 cm.

28011919 TLBAsc SEE NEXT CRD

NATIONAL RESEARCH AND EDUCATION
NETWORK (COMPUTER NETWORK)

TK
5105.875
.I57
N37
1994

National Research Council. NRENAISSANCE
Committee.
Realizing the information future /
NRENAISSANCE Committee, Computer
Science and Telecommunications Board,
Commission of Physical Sciences,
Mathematics, and Applications, National
Research Council. -- Washington, D.C. :
National Academy Press, 1994.
xv, 285 p. ; 28 cm.
ISBN 0-309-05044-8
1. National Research and Education
Network (Computer network) 2.
Information technology. 3. Computer
networks. 4. Learning and scholarship
--Technological innovations. 5.
Internet (Com puter network)

30574774 TLBAsc 94-65572

OLD COLONY RAILROAD.

HE
2791
.O42
E58
1992

Old Colony rehabilitation project,
environmental study of the revised
configuration of the Plymouth Line
terminal area / prepared by Sverdrup
Corporation.

1. Old Colony Railroad. 2.
Transportation--Massachusetts--Boston
Metropolitan Area--Planning. 3.
Massachusetts Bay Transportation
Authority--Commuter rail--Planning.

TLBAsc

PAVEMENTS, ASPHALT CONCRETE--ADDITIVES--EVALUATION.

TE
270
.L57
L55
1993

Little, Charles B.
Lime-treated mineral aggregate reduces moisture damages in asphaltic concrete pavement / Charles H. Little. -- [Austin, Tex. : Texas Dept. of Transportation, Office of Research and Technology Transfer, 1993]
iii, 6, A-7 p. : ill. ; 28 cm. -- (Departmental research / Texas Dept. of Transportation ; DHT-35)
STRN: DHT-35

1. Pavements, Asphalt concrete--Additives--Evaluation. 2. Pavements, Asphalt concrete--Moisture. 3. Aggregates (Building materials)--Testing.

30346960 TLBAsc

PAVEMENTS, CONCRETE--MAINTENANCE AND REPAIR.

TE
278
.P73
1993

Preliminary distress and performance prediction models for concrete pavements in Texas / by N. Singh ... [et al.]. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xviii, 138 p. ; 28 cm. -- (Research report ; 1908-1)
STRN: TX-94+1908-1
1. Pavements, Concrete--Maintenance and repair. 2. Pavements--Texas--Performance. 3. Pavements--Texas--Maintenance and repair.

30206607 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--LIVE LOADS--TESTING.

TE
270
.A47
C65
1993

Akram, Tayyeb.
Comparing pavement responses under FWD and truck loads / by Tayyeb Akram, Tom Scullion and Roger E. Smith. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, VA : Available through National Technical Information Service, 1993]
xi, 36 p. : ill. ; 28 cm. -- (Research report ; 1184-2, vol. 1)
STRN: FHWA/TX-92/1184-2, vol. 1
1. Pavements, Asphalt concrete--Live loads--Testing. 2. Pavements, Asphalt concrete--Maintenance and repair. 3. Trucks--Weight.

30020295 TLBAsc

PAVEMENTS, CONCRETE--PERFORMANCE.

TE
278
.P47
1993

Performance-related specifications for concrete pavements / [M.I. Darter ... et al.]. -- McLean, Va. : U.S. Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
3 v. : ill. ; 28 cm.
STRN: FHWA-RD-93-042

1. Pavements, Concrete--Performance. 2. Pavements, Concrete--Evaluation. 3. Pavements, Concrete--Design and construction.

30096464 TLBAsc

PAVEMENTS, ASPHALT--TEXAS--ADDITIVES--EVALUATION.

TE
270
.L56
L55
1993

Lindley, B. R. (Bobby R.)
Lime, aggregate, cement, emulsion (L.A.C.E.) : an innovative surface treatment / by B.R. Lindley. -- [Austin, Tex. : Texas Dept. of Transportation, Office of Research and Technology Transfer, 1993]
iii, 12 p. : ill. ; 28 cm.
STRN: DHT-28

1. Pavements, Asphalt--Texas--Additives--Evaluation. 2. Pavements--Skid resistance--Texas. 3. Aggregates (Building materials)--Texas--Testing.

30488673 TLBAsc

PAVEMENTS, CONCRETE--TESTING.

TE
278
.M32
P73
1993

McCullough, B. Frank.
Preliminary research findings on the effect of coarse aggregate on the performance of portland cement concrete paving / by B.F. McCullough, Dan Zollinger, and Brent T. Allison ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration by the Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin. -- Austin, Tex. : The Center ; Springfield, Va. : available through National Technical Information Service, [1993]
x, 102 p. : ill. ; 28 cm. -- (Research report ; 1244-5)
30523267 TLBAsc SEE NEXT CRD

PAVEMENTS, ASPHALT--TEXAS--TESTING.

TE
270
.S66
L66
1993

Solaimanian, Mansour.
Long-term evaluation of stripping and moisture damage in asphalt pavements treated with lime and antistripping agents / by Mansour Solaimanian, Thomas W. Kennedy, William E. Elmore. -- Austin, Tex. : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
ix, 66 p. : ill. ; 28 cm. -- (Research report ; no. 1286-1F)
STRN: FHWA/TX-94+1286-1F
1. Pavements, Asphalt--Texas--Testing. 2. Pavements, Asphalt--Texas--Moisture. 3. Pavements, Asphalt--Additives--Evaluation.
30488658 TLBAsc

PAVEMENTS, REINFORCED CONCRETE--MAINTENANCE AND REPAIR.

TE
278.5
.S94
S92
1993

Sukley, Robin.
Evaluation of mechanical couplers in continuously reinforced concrete pavements patches / Robin Sukley. -- [Harrisburg, Pa.] : Pennsylvania Dept. of Transportation, Bureau of Construction and Materials, Materials Testing Division ; [Springfield, Va. : Available through the National Technical Service], 1993.
[27] p.in various pagings, [5] folded leaves of plate : ill., map ; 28 cm.
STRN: FHWA-PA-93-005+86-103
1. Pavements, Reinforced concrete--Maintenance and repair. 2. Pavements--Pennsylvania--Maintenance and repair. 3. Reinforcing bars.

30464250 TLBAsc

PAVEMENTS--TEXAS--OVERLAYS.

TE
220.3
.A58
I57
1994

Anwar, Jamal.
Interface bonding of thin concrete overlays due to vehicular vibration / by Jamal Anwar, Soheil Nazarian and David B. Rozeodal. -- El Paso, Tex. : Center for Geotechnical and Highway Materials Research, University of Texas at El Paso ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
xii, 80 p. : ill. ; 28 cm. -- (Research report ; 1920-3F)
STRN: TX-93 1920-3F
1. Pavements--Texas--Overlays. 2. Pavements--Texas--Live loads--Testing. 3. Bridges, Concrete--Texas--Floors--Testing. 4. Pavements, Concrete--Testing.

30537488 TLBAsc

PESTS--BIOLOGICAL CONTROL.

TE
178
.B33
B56
1993

Hagen, K. S.
Biological control of pepper tree psyllid / [K.S. Hagen and L.E. Caltagirone]. -- [Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research, Office of Structural Materials ; [Springfield, VA : Available through the National Technical Information Service, 1993]
19 p. : ill. ; 28 cm.
STRN: RTA-56G062
1. Pests--Biological control. 2. Roadside plants--California. 3. Roadside improvement--California.

28920037 TLBAsc

PRACTISING LAW INSTITUTE--HISTORY.

KF
275
.A16
P57
1983

The First fifty years / Practising Law Institute. -- [New York] : The Institute, c1983.
viii, 120 p., [8] p. of plates : ill. ; 21 cm.

1. Practising Law Institute--History.

8896207 TLBAsc 83-150814

RAILROADS--CROSSINGS--DESIGN AND CONSTRUCTION.

HE
1617
.G84
1992

Guidelines for design of light rail grade crossings / prepared by ITE Technical Council Committee 6Y-37 ; chaired by Hans W. Korve. -- Washington, D.C. : ITE, c1992.
64 p., A-20 : ill. ; 28 cm. -- (Publication ; no. IR-063)

1. Railroads--Crossings--Design and construction. 2. Street-railroads.

TLBAsc

RAILROADS--NEW ENGLAND.

HE
2771
.A11
M37
1992

Martland, Carl D.
Rail service in New England : final report / by Carl D. Martland, Patrick Little, Alvaro E. Pereira. -- Cambridge, Mass. : Center for Transportation Studies, Massachusetts Institute for Technology, 1992.
xiv, 141 p. : ill., maps ; 28 cm.

1. Railroads--New England. 2. Railroads--New England--Freight. 3. Railroads--New England--Planning.

TLBAsc

ROAD CONSTRUCTION CONTRACTS--UNITED STATES.

HE
131
.T687n
no.344

Newman, Robert B. (Robert Brian), 1926-
Maintenance contracting / R.B. Newman and J.E. Garmong, and H.P. Hatry. -- Washington, D.C. : Transportation Research Board, National Research Council [1991]
111 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program report, ISSN 0077-5614 ; 344)
ISBN 0-308-04867-2

1. Roads--United States--Maintenance and repair. 2. Road construction contracts--United States.

25678930 TLBAsc 91-68144

ROAD CONSTRUCTION CONTRACTS--UNITED STATES.

HE
131
.T687sy
no.195

Hancher, Donn E.
Use of warranties in road construction / Donn E. Hancher. -- Washington, D.C. : National Academy Press, [1994]
60 p. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 195)

1. Road construction contracts--United States. 2. Construction industry--United States--Quality control. 3. Roads--United States--Design and construction. 4. Warranty.

30602247 TLBAsc 93-61549

ROAD DRAINAGE--MATHEMATICAL MODELS.

TE
215
.K34
V47
1993

Kaighn, Robert J.
Verification of the pressurized flow simulation module (PFSM) of Hydra / [Robet J. Kaighn]. -- McLean, Va. : Federal Highway Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
iv, 53 p. ; 28 cm.
STRN: FHWA-RD-92-100

1. Road drainage--Mathematical models. 2. Runoff--Mathematical models. 3. Storm sewers. 4. HYDRA (Computer file).

29578892 TLBAsc

ROAD MARKINGS.

TE
203
.G86
D48
1994

Gupta, Jiwan D.
Development of criteria for design, placement and spacing of rumble stripe / by Dr. Jiwan D. Gupta. -- [Toledo, Ohio] : University of Toledo ; Springfield, Va. : Available to the public through the National Technical Information Service, [1994]
1 v. (various pagings) : ill., maps ; 28 cm.
STRN: FHWA/OH-93/022

1. Roads--Ohio--Safety measures. 2. Road markings.

30210023 TLBAsc

ROAD MARKINGS--TESTING.

TE
203
.U44
R47
1994

Ullman, Gerald L.
Retroreflective raised pavement marker field testing : results of the first year of evaluation / by Gerald L. Ullman. -- College Station, TX : Texas Transportation Institute, the Texas A&M University System ; [Springfield, VA : Available through the National Technical Information Service, 1994]
xi, 84 p. : ill., map ; 28 cm. -- (Research report / Texas Transportation Institute ; 1946-2)
STRN: TX-93/1946-2

1. Road markings--Testing. 2. Reflectors (Safety devices)--Testing.

30396372 TLBAsc

ROADS--DESIGN AND CONSTRUCTION.

TE
175
.G46
1992

Geometric design and operational considerations for trucks / prepared by ITE Technical Council Committee 5B-28 ; chaired by Kay Fitzpatrick. -- Washington, D.C. : ITE, 1992.
85 p. : ill. ; 28 cm. -- (Publication ; no. IR-062)

1. Roads--Design and construction. 2. Tractor trailer combinations. 3. Trucks--Sizes.

27981969 TLBAsc

ROADS--DESIGN AND CONSTRUCTION--COMPUTER PROGRAMS.

TE
175
.H37
C66
1994

Barwood, D. W.
Conceptual plan for an interactive highway safety design model / [D.W. Barwood, J.M. Mason, and J.L. Graham. -- McLean, Va. : U.S. Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
v, 127 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-122

1. Roads--Design and construction--Computer programs. 2. Roads--Safety measures. 3. Roads--Intersections and interchanges. 4. Roads--Shoulders

30105896 TLBAsc

ROADS--INTERCHANGES AND INTERSECTIONS.

TE
4188
.I721
1993

Boetetter, E. S.
Trade-off between delineation and lighting of freeway interchanges : investigation of transient visual adaptation / [E.S. Boetetter, E.G. Carter, G.W. Dauber]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
24 p. : ill. ; 28 cm.
STRN: FHWA-RD-91-041

1. Roads--Interchanges and intersections. 2. Roads--Lighting. 3. Road markings. 4. Roads--Visibility.

29336205 TLBAsc

ROADS--INTERCHANGES AND INTERSECTIONS--MATHEMATICAL MODELS.

TE
175
.M84
063
1993

Mulinazzi, Thomas.
Operational analysis of collector-distributor systems / Thomas E. Mulinazzi. -- [Topeka, Kan. : Kansas Dept. of Transportation, 1993]
363 p. in various pagings : ill. ; 28 cm.
STRN: K-TRAN: KSU-92-3

1. Roads--Interchanges and intersections--Mathematical models. 2. Traffic flow--Mathematical models. 3. Express highways--Mathematical models.

30535884 TLBAsc

ROADS--TEXAS--FINANCE.

HE
355.3
.F3
T48
1993

Texas highway cost allocation : analysis and estimates, 1992-1994 / prepared by Mark A. Buritt ... [et al.]. -- Austin, Tex. : Center for Transportation Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 64 p. : ill. ; 28 cm. -- (Research report ; 1919-2/1910-3)
STRN: TX-94+1919-2/1910-3

1. Roads--Texas--Finance. 2. Transportation, Automotive--Taxation--Texas. 3. Trucks--Taxation--Texas.

30488591 TLBAsc

ROADSIDE IMPROVEMENT--ARIZONA--COMPUTER PROGRAMS.

TE
177
.L36
L36
1994

Landphair, Harlow.
Landscape inventory and management system technology for highway transportation / prepared by Harlow Landphair, Terry Larsen, Cliff Perry. -- Phoenix, Ariz. : Arizona Dept. of Transportation ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
vi, 88, [42] p. : ill. ; 28 cm.
STRN: FHWA-AZ-94-318

1. Roadside improvement--Arizona--Computer programs. 2. Highway engineering--Arizona--Computer programs. 3. PiMa (Computer file)

30494175 TLBAsc

ROUTE 57 (MASS.)

HE
356
.M457
R68
1993

Route 57 relocation project, phase II : Agawam/Southwick, Massachusetts / U.S. Dept. of Transportation, Federal Highway Administration; Massachusetts Highway Dept. -- [Cambridge, Mass.] : Federal Highway Administration, 1993
1 v. (various paginge) : ill., maps, plans ; 28 cm.

1. Route 57 (Mass.)

TLBAsc

SHIPPING--FORECASTING--CONGRESSES.

HE
131
.T687c
no.392

Maritime transportation strategic planning : proceedings of a TRB workshop, June 5-7, 1991, National Academy of Sciences, Washington, D.C. -- Washington, D.C. : Transportation Research Board, [1992]
64 p. : charts ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 392 (March 1992))

1. Shipping--Forecasting--Congresses. 2. Shipping--Planning--Congresses. 3. Containerization--Planning--Congresses. 4. Strategic planning--Congresses.

TLBAsc

SOIL POLLUTION--GEORGIA.

TD
878
.K56
H56
1991

King, Pamela L.
Bioremediation of organic contaminants / by Pamela L. King, Heather S. Hitchcock. -- [Atlanta, Ga.] : Georgia Dept. of Transportation, Office of Materials and Research, [1991]
viii, 42 leaves : ill. ; 28 cm.
STRN: FHWA-GA-91-9007

1. Soil pollution--Georgia. 2. Roads--Environmental aspects--Georgia. 3. Bioremediation.

28061857 TLBAsc

SOIL STABILIZATION.

HE
131
.T687r
no.1414

Segmental concrete MSE walls, geogrid reinforcements, and soil nailing. -- Washington, D.C. : National Academy Press, 1993.
v, 70 p. : ill. ; 28 cm. -- (Transportation research record ; 1414)
ISBN 0-309-05562-8 (pbk.)

1. Soil stabilization. 2. Embankments--Design and construction. 3. Soil mechanics.

30120897 TLBAsc

SUPERVISION OF EMPLOYEES--EDUCATION.

HE
131
.T687sy
no.188

Harder, Barbara T.
Management training and developmental programs / Barbara T. Harder. -- Washington, D.C. : National Academy Press, 1994.
56 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 188)
ISBN 0-309-05320-X

1. Supervision of employees--Education. 2. Transportation--Personnel management. 3. Employees--Training of.

30601963 TLBAsc 93-61746

TOLL ROADS--MANAGEMENT.

HE
131
.T687sy
no.194

Pietrzyk, Michael C.
Electronic Toll and Traffic Management (ETTM) systems / Michael C. Pietrzyk. -- Washington, D.C. : National Academy Press, 1993.
63 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program synthesis of highway practice , ISSN 0547-5570 ; 194)
ISBN 0-309-05318-8

1. Toll roads--Management. 2. Tolls. 3. Motor vehicles--Automatic location systems. 4. Electronics in transportation.

28991814 TLBAsc 93-61550

TRAFFIC ACCIDENTS--UNITED STATES--STATISTICS.

HE
5614.2
.T76
A32
1994

Troxel, Lori A.
Accident data analysis of side-impact, fixed object collisions / [Lori A. Troxel, Malcolm H. Ray, and John F. Carney III]. -- McLean, Va. : U.S. Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
vii, 94 p. : ill. ; 28 cm.
STRN: FHWA/RD-91-122

1. Traffic accidents--United States--Statistics. 2. Crash injuries--United States--Statistics. 3. Automobiles--Collision damage--United States.

30488605 TLBAsc

TRAFFIC CONGESTION--MANAGEMENT.

HE
336
.C64
A97
1986

Automobile travel reduction options for urban areas. -- Washington, D.C. : Institute of Transportation Engineers, c1986.
iii, 27 p. ; 28 cm. -- (ITE publication ; no.IR-041)

1. Traffic congestion--Management. 2. Urban transportation--Management.

.5183141 TLBAsc

TRAFFIC CONGESTION--MATHEMATICAL MODELS--EVALUATION.

HE
336
.C64
B34
1993

Balke, Kevin N.
An evaluation of existing incident detection algorithms / by Kevin N. Balke. -- College Station, TX : Texas Transportation Institute ; [Springfield, VA : Available through the National Technical Information Service, 1993]
xiv, 86 p. : ill. ; 28 cm. -- (Research report / Texas Transportation Institute ; 1232-20)
STRN: FHWA/TX-93/1232-20
1. Traffic congestion--Mathematical models--Evaluation. 2. Traffic flow--Mathematical models--Evaluation. 3. Disabled vehicles on express highways. 4. Computer a lgorithms--Evaluation.

30578714 TLBAsc

TRAFFIC CONGESTION--UNITED STATES--PLANNING--CONGRESSES.

HE
336
.C64
C66
1994

Conference on the Effects of Added Transportation Capacity (1991 : Bethesda, Md.)
The Effects of Added Transportation Capacity : conference proceedings, December 16 and 17, 1991 / prepared by Gordon A. Shunk (Texas Transportation Institute). -- Washington, D.C. : U.S. Dept. of Transportation : Distributed in cooperation with Technology Sharing Program, [1994]
1. Traffic congestion--United States--Planning--Congresses. 2. Traffic estimation--United States--Congresses. 3. Transportation--United States--Planning--Congresses. 4. Air quality management--U nited States--Congresses.

30352682 TLBAsc

TRAFFIC FLOW--UNITED STATES--STATISTICS.

HE
371
.A3
T723
1985

Traffic monitoring guide : procedures for the collection and analysis of traffic volume data, vehicle classification data, truck weight data. -- [Washington, D.C.?] : U.S. Dept. of Transportation, Federal Highway Administration, Office of Highway Planning, Highway Statistics Division, 1985.
1 v. (various pagings) : ill., 1 form ; 28 cm.

1. Traffic flow--United States--Statistics. 2. Traffic surveys--United States.

12492410 TLBAsc

TRAFFIC SAFETY--COST EFFECTIVENESS.

HE
5614.2
.M34
D48
1994

Mak, King K.
Development of roadside safety data collection plan / [King K. Mak and Dean L. Sicking]. -- McLean, Va. : U.S. Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
vi, 90 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-113

1. Traffic safety--Cost effectiveness. 2. Roads--Safety measures--Cost effectiveness.

30050530 TLBAsc

TRAFFIC SIGNS AND SYMBOLS.

TE
228
.D74
1994

Driver interpretations of existing and potential lane control signal symbols for freeway traffic management / by Gerald L. Ullman ... [et al.]. -- College Station, TX : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : available through National Technical Information Service, 1993]
xvii, 80 p. : ill. ; 28 cm. -- (Research report ; 1208-1)

1. Traffic signs and symbols. 2. Traffic engineering. 3. Highway communications. 4. Electronic traffic controls.

30502321 TLBAsc

TRAFFIC SURVEYS--TEXAS.

HE
371
.T4
P42
1993

Pearson, David F.
Urban travel in Texas : an overview of travel surveys / by David F. Pearson ; sponsored by Texas Departeent of Transportation ; in cooperation with U.S. Department of Transportation, Federal Highway Administration. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vi, 28 p. : charts ; 28 cm. -- (Research report ; 1099-1)
STRN: FHWA/TX-92/1099
1. Traffic surveys--Texas. 2. Urban transportatio n--Texas. 3. Commuting--Te xas.

28492896 TLBAsc

TRANSPORTATION--ECONOMIC ASPECTS--TEXAS.

HE
4461
.B56
F56
1992

Ringrose, Michael B.
Financial benefits associated with the joint development and use of transit facilities in Texas / by Michael B. Ringrose, Katherine F. Turnbull. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System, [1992]
xvii, 106 p. : ill. ; 28 cm. -- (Research report ; 1206-1F)

28050787 TLBAsc SEE NEXT CRD

TRANSPORTATION--ENVIRONMENTAL ASPECTS.

HE
131
.T687r
no.1416

Environmental analysis, air quality, noise, energy, and alternative fuels / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 130 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1416)
ISBN 0-309-05563-6
1. Transportation--Environmental aspects. 2. Automobiles--Motors--Exhaust gas. 3. Traffic noise. 4. Diesel motor--Alternate fuels. 5. Internal combustion engines, Spark ignition--Alternate fuels.

30130193 TLBAsc

TRANSPORTATION--ENVIRONMENTAL ASPECTS--BIBLIOGRAPHY.

REF.
Z
5863
.T7
B58
1993

Environmental externalities and social costs of transportation systems : measurement, mitigation and costing : an annotated bibliography / Federal Railroad Administration, Office of Policy. -- [Washington, D.C.] : U.S. Dept. of Transportation, Federal Railroad Administration [1993]
87 p. : ill. ; 28 cm.
1. Transportation--Environmental aspects--Bibliography. 2. Transportation--Social aspects--Bibliography. 3. Transportation--Costs--Bibliography. 4. Externalities (Economics)--Bibliography. 5. Environmental protection--Costs--Bibliography.

30396834 TLBAsc

TRANSPORTATION--MASSACHUSETTS--BOSTON METROPOLITAN AREA--PLANNING.

HE
214
.B71
I73
1985

Setting priorities among transportation projects : for the Metropolitan Planning Organization : a study : final draft / prepared by the Metropolitan Area Planning Council. -- [Boston : The Council, 1985]
18 p. ; 28 cm.

1. Transportation--Massachusetts--Boston Metropolitan Area--Planning. 2. Highway planning--Massachusetts.

24321893 TLBAsc

TRANSPORTATION--PLANNING--MASSACHUSETTS.

HE
4487
.M4
T72
1987

A transit performance measurement system for the Massachusetts Executive Office of Transportation and Construction : final report. -- [Boston, Mass. : Deloitte Haskins & Sells], 1987.
1 v. (various pagings) : ill. ; 28 cm.

1. Massachusetts. Executive Office of Transportation and Construction. 2. Transportation and state--Massachusetts. 3. Transportation--Planning--Massachusetts. 4. Local transit--Massachusetts--Evaluation.

TLBAsc

TRANSPORTATION--TEXAS--FORECASTING.

HE
370
.C75
W54
1992

Williams, Tom A.
Summary documentation for the Texas travel demand package / by Tom A. Williams and George B. Dresser. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : available through National Technical Information Service, 1992]
ix, 44 p. : ill. ; 28 cm. -- (Research report ; 1375-1)
1. Transportation--Texas--Forecasting. 2. Traffic engineering--Texas. 3. Highway planning--Texas. 4. TRIPCAIS (Computer Program) 5. Trip generation--Data processing.

28042658 TLBAsc

TRUCK ACCIDENTS--UNITED STATES--EVALUATION.

HE
5614.2
.U54
I78
1992

United States. General Accounting Office.
Truck safety : the safety of longer combination vehicles is unknown : report to the Chairman, Subcommittee on Surface Transportation, Committee on Public Works and Transportation, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
53 p. : ill. ; 28 cm.

25532636 TLBAsc SEE NEXT CRD

UNDERWATER IMAGING SYSTEMS--EVALUATION.

VM
901
.T42
1993

Technical survey and evaluation of underwater sensors and remotely operated vehicles / Bradley G. DeBoos ... [et al.]. -- Groton, Conn. : U.S. Coast Guard Research and Development Center ; Springfield, Va. : Available through the National Technical Information Service, [1993]
323 p. in various pagings : ill. ; 28 cm.
STRN: CG-D-21-93

1. Underwater imaging systems--Evaluation. 2. Remote submersibles--Evaluation. 3. Ships--Maintenance and repair.

30058193 TLBAsc

URBAN TRANSPORTATION POLICY--UNITED STATES.

HE
308
.U54
T72
1991

United States. General Accounting Office.
Traffic management : federal policies to encourage low-cost approaches need to be strengthened : briefing report to congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office, 1991.
40 p. : ill. ; 28 cm.

1. Urban transportation policy--United States.

24579858 TLBAsc

WORDPERFECT (COMPUTER FILE)

A-V
Z
52.5
.W65
U62
1993

Updating to WordPerfect 6.0. [videorecording]. -- Pryor, OK : ViaGrafix, [c1993].
1 videocassette (46 min.) : sd., col. ; 1/2 in. + 1 computer diskette (3 1/2 in.). -- (ViaGrafix video training series) (Video tutor)
ISBN 0-922264-01-5

1. WordPerfect (Computer file)

28241457 TLBAsc

PLANNING CONTENTS

American Planning Association Vol. 60, No. 8 August 1994

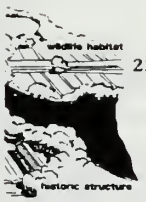
8 **Portland Revs Up for Action.**
Gordon Oliver surveys the Oregon city's transit, road, and parking systems. Part of a year-long series on transportation.

14 **When Wal-Mart Says 'Uncle.'**
Sylvia Lewis describes what happens when communities stare down the big box retailers.

20 **Our Towns.**
A photo album of small town America—by David Plowden.

22 **Coping With Runoff—With or Without a New Clean Water Act.**
Julie Bennett reports on watershed wars—in Planning Practice.

22



Cover: Photo of Portland, Oregon, by John V.A.F. Neal.

14



5 **From the Capitals**
27 **Tech**
Transportation tools.
28 **Planning News**
Nevada water, Jackson Hole plan.
30 **APA News**
Planning teams, PAB.
32 **From the Board**
Neopolemics.
33 **Letters**
Takings, gating up.
35 **Planners Library**
Metro America, Hawaii laws.
39 **Conference Calendar**
40 **Consultant Directory**
46 **In the Works**
Joliet arsenal.

20



PLANNING CONTENTS

American Planning Association Vol. 60, No. 7 July 1994





27

8 **Getting on the GIS Career Track.** Planners are tapping into GIS as a professional specialty. Ginger Juhl reports in Planning Practice.

12 **HUD's Geography of Opportunity.** Mary Lou Gallagher explains a new program that helps inner-city people move to the suburbs.

14 **Sprawl Can Be Good. Really.** Fritz Steiner says so.

20 **Dig These Gardens.** Nature is making a comeback in the city, reports Ruth Knack.

26 **Sold! To the Bidder in Back—An Affordable House.** Private auctions help cities sell abandoned houses. By Janet Heller.



20

5 **From the Capitals**

28 **Tech**
Computer mapping.

29 **Planning News**
High court rulings, Metro Council.

31 **APA News**
Going on line, new staff.

32 **Commissioners Memo**
Dallas flap, Carol Swayne.

33 **Letters**
Florida, light rail.

35 **Planners Library**
Oregon, Cisneros anthology.

39 **Conference Calendar**

40 **Consultant Directory**

46 **Viewpoint**
Monet's NIMBY.

NEWS



PY HEADQUARTERS PSETS CONGRESS

intelligence agency had the cost of its headquarters capped when Congress lly discovered its scope. Page 8

VIRONMENT
Copper plant's silver lining
Landfill loses major backer
Arizona pols pound drums from California

ILDINGS
California pushes code change

9 Great pains over church's great panes
19 Niagara Falls scheme has location and more

TRANSPORTATION
7 California solves shaky funding
7 Boston reviews management
10 Tie bars replace slab rebar in bridge deck
15 Partners to pipe Alberta gas to U.S.
16 T.Y. Lin stakes reputation on funding toll road in China

LABOR
6 The recovery shows its stuff
13 Jobless rate is at new low
14 Chem Waste must pay fired 'whistleblower'
15 New Jersey steps up work zone safety

POWER
17 Better plants coming for enriching uranium
18 Proposals would alter Canada policy

RESEARCH & EQUIPMENT
13 New line of cranes debuts
22 Corps awards grants for seven projects

VER STORY

ST TRAINS JICKEN TEMPO R NEW TRACK



ope and Japan are building high-speed railroads and restructuring existing tracks to accommodate 150-mph trains. Amtrak is in the midst of a -million upgrade for high-speed trains on its Northeast Corridor. Page 24

TURES

Compensation: Engineers' salaries on the rise

STRUCTION ECONOMICS

Materials Prices: Fabricated steel prices jump again
Market Trends: Educational and medical buildings

T WEEK IN ENR

kyo minicity

DEPARTMENTS

2 Letters
3 Construction Week
5 Washington Observer: Crime bill, Appropriations, Highways, Health care
35 Product Showcase
34 Software Products
36 Pulse
53 Official Proposals (continued on pp. 54-56)
58 Editorials

NEWS



NUCLEAR CLEANUP CHANGES BREWING

Major changes in contracting and philosophy are afoot at Hanford and Rocky Flats, two of the Dept. of Energy's largest cleanup projects. Page 8

ENVIRONMENT
10 San Diego gets help from an old adversary
15 San Francisco mulls water plans
24 Japan ships in water to combat drought

TRANSPORTATION
17 Sturgeon survive pier blast
20 Texas rescinds high-speed rail franchise
20 FHWA shares out its unspent 1994 funds

COMPANIES AND UNIONS
12 ICF Kaiser buys geotechnical firm
13 Fuller shuts domestic unit
13 Union president survives challenge
16 Concrete commissions create controversy

TECHNOLOGY
10 DOE to market lab efforts
23 Rigging job previewed with animation
25 Old coffee containers waterproof concrete

OBITUARIES
23 Steel technology expert Haaijer dies

BUILDINGS
10 Crime bill pays plenty
24 AID funds housing for Russian troops

COVER STORY



SPENDING OVERHAUL

As the federal government reinvents procurement, new contracting methods replace rules once cast in stone. Page 82

NEXT WEEK IN ENR

Chicago Post Office delivered

FEATURES

28 New breezes blow in Puerto Rico
81 Environmental Update: Pipeline fight coming to a head

DEPARTMENTS

4 Calendar
5 Construction Week
7 Washington Observer: Clean water loans, Flood control, China
88 Product Showcase
89 Pulse
108 Official Proposals (continued on pp. 109, 113)
114 Editorials

CONSTRUCTION ECONOMICS

95 Materials Prices: Ready-mix concrete price hikes keep coming
96 Market Trends: Airport paving and terminal construction

GIS WORLD
VOL. 7, NO. 7 The World's Leading Geographic Information Systems Publication JULY 1994

FEATURES



Page 42 By following a few guidelines, you can guarantee a successful digital orthophotograph project.



Page 46 GIS can be a valuable tool for identifying and modeling drainage basins that need improvements.



Page 49 A wide range of data providers are emerging to provide community-based nonprofit groups access to data and analytical assistance.

42 **A Guide to Acquiring Digital Orthophotography**
By James Cannistra and Richard Goodden

46 **City Prioritizes Watershed Basins for Storm Water Master Plan**
By Tom Cash

49 **Data Providers Empower Community GIS Efforts**
By Michael G. Barndt and William J. Craig

52 **University Develops Long-Range GIS Plan**
By William E. Huxhold and Sona Andrews

56 **Meet the Challenge of Public Spatial Data Demand**
By Bruce Westcott

GIS WORLD
VOL. 7, NO. 8 The World's Leading Geographic Information Systems Publication AUGUST 1994

FEATURES



Page 44 A bold new initiative headed by the U.S. Environmental Protection Agency will provide essential information on America's coastal resources.



Page 51 Multimedia is changing the way people look at maps in a GIS.

34 **Solving the Data Conversion Puzzle: Find the Solution That Is Best for You**
By Karen Ingersoll

41 **Data Conversion Lessons Learned in the Trenches**
By William J. Bamberger, Thomas J. Richa, and Jennifer L. Trowbridge

44 **EPA Program Monitors U.S. Coastal Environments**
By Jane Copeland, Christopher Smith, Stephen Hale, Peter August and Richard Latimer

48 **Spatial Data Transfer Standard: Do You Fit the Profile?**
By Carolyn K. Kelley and Toni Gosinski

51 **Multimedia Enhances GIS Applications**
By Martin Huber

HISPANIC BUSINESS

September 1994 • Volume 16, Number 9

F E A T U R E S

POLITICS:
Stepping Out of the Executive Suite 12
Mary Alice Acevedo sets her sights on Congress.

MILESTONES:
A Confirmation of Maturity and Stability' 16
FAA deal catapults WCG into upper echelons of Hispanic-owned firms.

VOLUNTEERS:
A Man With A Mission 20
The Peace Corps has an offer business graduates can't refuse.

TRADE:
Another Gateway to Latin America 22
Does Puerto Rico have the inside track on trade?

CAPITAL:
A Match Made In Fiber Optics 24
On-line services provide high-tech access to investment angels.

COVER STORY:
■ THE 1994 HIGH-TECH 50 DIRECTORY 28
In the age of instant telecommunications, these CEOs know their future rides on the information superhighway.

BIZWARE:
Ready For E-Mail? 40
New column explores software that bridges the communications gap.

AUTO:
Chrysler's Dealership Program — Is It Fair? 46
After 20 years it has produced two Hispanic dealers.

NEW BUSINESS GUIDE:
No Place Like Home 50
The changing culture in corporate America creates home-based boom.

D E P A R T M E N T S

DIRECT LINE 4
BUSINESS OUTLOOK 6
BUSINESS NOTES 54
ABOUT PEOPLE 56
CAREER TRACK 58
WORLD TRADE 63

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 JULY/AUGUST 1994

NEWS

AIRPORTS
Denver opening delayed again; Expensive Tokyo; Environmental news 2

Beirut back on the map; China opens new resort airport; In brief 3

Passenger traffic figures; US airport credit rating concerns; In brief 4

INDUSTRY
EC harmonises airport facility tendering; industry contracts 6

industry share prices/contracts 7

ATC
FAA's move to drop MLS puts pressure on Europe 9

ATC contracts 10

NEW PRODUCT REVIEW
Air traffic management; Airport monitoring systems; ATC information displays 11

Navaids; Communications; Master time systems 12

AIRPORTS

REFUELLING
Airports find new ways to reduce fuel leaks 13

CHANNEL TUNNEL
Airlines confront Eurostar 19

INFORMATION DISPLAYS
BAA upgrades LHR FIDS 21

BAGGAGE HANDLING
New technology poised to find misplaced bags 2

CONSTRUCTION
New standards for airports in Central Europe 2

ATC

USA
FAA considers taking corporate approach 3

LIGHTS
Smart lamps aid safety 3

REGULATIONS
Proliferation of green laws 3

INTERVIEW

DIRECTOR RADAR AND SYSTEMS DIVISION ALENIA
Paolo Prudente 4

NEXT MONTH

The September issue will include the following features:

- **Special bilingual editorial feature:** The airport equipment market in China.
- **Communications equipment:** The latest developments in UHF/VHF radio systems will be examined, along with the impact o digital control systems for voice switching applications.
- **Airport region – North America: A look** at airline, airport and ATC developments throughout the region.
- **People movers:** As new automated people-moving systems go into operation we report on how economical and reliable they have proved, balancing the initial high expenditure with long-term benefits.
- **Flight Information Display Systems:** As software developments allow FIDS to become more flexible in the presentation of data, we look at the commercial potential of FIDS networks in airports worldwide.
- **Buyer's Guide:** Emergency vehicles

Institute of Transportation Engineers

ITE JOURNAL

Volume 64, Number 7
July 1994

Contents

Articles

13 **International President's Message**

14 **Get to Know the Vice President Candidates**

17 **Rail—A Key Part of the Dallas–Fort Worth Regional Mobility Solution**
By Douglas A. Allen and Dan Kessler
Ten years after the inception of the Dallas Area Rapid Transit Authority, the long-awaited and promising rail system is taking shape. This is the third in a series on Dallas, Texas, the host city of the 64th ITE Annual Meeting.

24 **Parking and Trip Generation Characteristics for Day-Care Facilities**
By John W. Van Winkle and S. Colin Kinton
Because of the growing number of day-care facilities in single-family homes in residential areas, better guidelines for adequate on-site parking need to be established.

30 **Impact of Residential Street Standards on Neo-Traditional Neighborhood Concepts**
By Gordon R. Shaw
A review of four widely accepted documents that present standards relating to residential street design.

35 **Continuous Flow Intersections**
By Reuben Goldblatt, Francisco Mier and Joel Friedman
Continuous flow intersections are one alternative to combatting traffic flow problems that cause congestion.

43 **Truck Trip Generation Characteristics of Nonresidential Land Uses**
By Ramakrishna R. Tadi and Paul Balbach
Despite growing interest in trip generation, there is limited data available for certain land use categories, especially for trucks. The authors present truck trip generation characteristics for various land uses.

News

10 **Washington Report**
National Highway System Bill Clears House • GAO Report on Traffic Control Systems • Congestion Pricing/IVHS Grants

11 **Call for Information by ITE Task Force on Ethics Issues**

Departments

6 **Calendar**

8 **To the Editor**

48 **Professional Services Directory**

56 **Positions**

62 **Advertisers Index**

On the cover: The Natchez Trace Parkway near Tishomingo, Miss. The parkway runs from Tennessee to Mississippi. © Photo by Raymond Gehman

Institute of Transportation Engineers

ITE JOUR

Volume 64, Nu
Augu

Contents

Articles

16 **An Informational Report: Determining Vehicle Signal Change and Clearance Intervals**
By ITE Technical Council Task Force 4TF-1
Various methods used to determine vehicle signal change intervals are discussed so as to provide traffic engineers with a variety of viable alternatives.

18 **International President's Message and Constitution Amendments**
ITE members are encouraged to review and comment on proposed amendments to the Institute's Constitution.

24 **An Informational Report: Existing Practices for Interconnecting Traffic Signals**
By ITE Technical Council Committee 4A-31
A survey of current practices provided insufficient conclusions, but valuable information was gathered to support the need for further study.

25 **Backup Power for Traffic Signals**
By Vernon H. Waight
Based on a survey of agencies throughout the United States and Canada, it is recommended that every state and province develop legislation to define traffic control at intersections during power failures.

26 **Highway Capacity Manual Update: New Capacity Analysis Techniques are on the Way**
By John D. Zegeer
Information on what is pending with the manual.

28 **Special Report: Teamwork in the Wake of the Quake**
The collective effort by public officials and transportation agencies involved with keeping the Los Angeles area moving after the Northridge Earthquake is honored by ITE with the awarding of the 1994 Transportation Achievement Award.

News

12 **Washington Report**
FHWA Delays Metric Sig Requirements • ADA Gu Reject ITE Proposal • Sup Court Ruling Boosts Land Rights

14 **ITE News**
Shanghai Expo • A New Emergency Database • Tri Generation Errata • FTA' Geographic Database

Departments

5 **Calendar**

10 **To the Editor**

35 **Council/Section News**

36 **People and the Professio**

40 **Elections to the Grade of Fellow**

41 **Products**

44 **Publications**

47 **Professional Services Dir**

54 **Positions**

Journal of
Structural Engineering
Volume 120 Number 7 July 1994

Technical Papers

Variation of Ductility Capacity of Steel Beam-Columns.
Masayoshi Nakashima 1941

Element Identification of Member Properties of Framed Structures.
Andres W. C. Oreta and Tada-aki Tanabe 1961

Mechanical Behavior of Metal Contact Joint.
Shigeru Kuranishi, Futami Naganuma, Masatoshi Nakazawa, and Tetsuo Iwakuma 1977

Corrosion Fatigue of Stiffened Offshore Steel Tubular Joints.
D. S. Ramachandra Murthy, A. G. Madhava Rao, and A. R. Santhakumar 1991

Simulation of Blast Pressure on Flexible Panel.
Avinash C. Singhal, Debra Larson, Sanjay Govil, and Vikram Karmakar 2011

Ductility of Concrete-Filled Steel Box Columns under Cyclic Loading.
Tsutomu Usami and Hanbin Ge 2021

Nonlinear Inelastic Analysis of Steel Beam-Columns. I: Theory.
Yong Lin Pi and N. S. Trahair 2041

Nonlinear Inelastic Analysis of Steel Beam-Columns. II: Applications.
Yong Lin Pi and N. S. Trahair 2062

Grout Repair of Dented Offshore Tubular Bracing—Experimental Behavior.
James M. Ricles, Troy E. Gillum, and William Lamport 2086

Predicting Strength Variability of Concrete Offshore Structures.
Perry Adebar, Ricardo Foschi, and Felix Yao 2108

Comparative Analysis of Bridge Superstructure Deterioration.
David Veshosky, Carl R. Beidleman, Gerald W. Buetow, and Muge Demir 2123

Equivalent Frame Analysis of Flat Plate Buildings for Seismic Loading.
Y. H. Luo, A. J. Durrani, and J. P. Conte 2137

Practical Second-Order Inelastic Analysis of Semirigid Frames.
W. S. King and W. F. Chen 2156

Destructive Testing of Decommissioned Concrete Slab Bridge.
R. A. Miller, A. E. Aktan, and B. M. Shahrooz 2176

Dynamic Modeling of Slab Formwork during Concrete Placement.
Saeed Karshenas and Stephen M. Heinrich 2199

Technical Notes

Long-Term Deflection of RC Beams.
W. A. M. Alwis, A. Olorunniwo, and K. K. Ang 2220

Shear Connection in Haunched Composite Beams with Sloping Sides.
Deric John Oehlers and Sung Moo Park 2227

Prestress Force Effect on Vibration Frequency of Concrete Bridges.
M. Saiidi, B. Douglas, and S. Feng 2233

Optimum Number of Specimens for Low-Cycle Fatigue Tests of Concrete.
Todorka Paskova and Christian Meyer 2242

Journal of
Structural Engineering
Volume 120 Number 8 August 1994

TECHNICAL PAPERS

Experimental Verification of Beam Models for RC.
Toshikatsu Ichinose and Katsuki Takiguchi 2261

Effect of Bolt Slippage on Ultimate Behavior of Lattice Structures.
S. Kitipornchai, F. G. A. Al-Bermani, and A. H. Peyrot 2281

Analytical Approach to Collapse Mechanisms of Circular Masonry Arch.
Carlo Blasi and Paolo Foraboschi 2288

Seismic Shear Strength of Reinforced Concrete Columns.
M. J. Nigel Priestley, Ravindra Verma, and Yan Xiao 2310

Guidelines for Design of Joints between Steel Beams and Reinforced Concrete Columns.
ASCE Task Committee on Design Criteria for Composite Structures in Steel and Concrete 2330

Analytical Model for Steel-Jacketed RC Circular Bridge Columns
Y. H. Chai, M. J. N. Priestley, and F. Seible 2358

Fracture Size Effect. Review of Evidence for Concrete Structures.
Zdeněk P. Bažant, Joško Ožbolt, and Rolf Eligehausen 2377

Compression-Member Models for Space Trusses: Review.
Erling Murtha-Smith 2399

Empirical Mohr-Coulomb Failure Criterion for Concrete Block–Mortar Joints.
M. Ayubur Rahman and Subhash C. Anand 2408

Journal of
Transportation Engineering
Volume 120 Number 4 July/August 1994

TECHNICAL PAPERS

Passenger-Terminal Simulation Model.
José Reynaldo Setti and Bruce G. Hutchinson 517

Optimum Design of Airport Enplaning Curbside Areas.
Mahmoud S. Parizi and John P. Braaksma 536

Comparison of Traditional and Neural Classifiers for Pavement-Crack Detection.
Mohamed S. Kaseko, Zhen-Ping Lo, and Stephen G. Ritchie 552

Effect of Material Properties on Compactability and Bearing Capacity.
Chris J. Semmelink and Alex T. Visser 570

Effect of Orientation of Approach Slabs on Pavement Deformation.
H. K. W. Wong and J. C. Small 590

Seasonal Variation of Resilient Modulus of Subgrade Soils.
Myung S. Jin, K. Wayne Lee, and William D. Kovacs 603

Vertical Pavement Strain as Means of Weighing Vehicles.
J. G. Marsh and R. J. Jewell 617

Test and Evaluation Criteria for Side-Impact Roadside Appurtenance Collisions.
M. H. Ray and J. F. Carney III 633

Basics of Flexible Pipe Structural Design.
R. C. Prevost and K. K. Kienow 652

Deflection Amplification Factor for Seismic Design Provisions.
Chia-Ming Uang and Ahmed Maarouf 242

Structural Damage Identification from Dynamic-Test Data.
Juan R. Casas and Angel C. Aparicio 243

Spread of Plasticity: Quasi-Plastic-Hinge Approach.
Mourad R. Attalla, Gregory G. Deierlein, and William McGuire 245

Seismic Performance of Steel-Encased Composite Columns.
James M. Ricles and Shannon D. Paboojian 247

Codification of Wind-Pressure Coefficients for Multispan Gable Roofs.
Theodore Stathopoulos and Patrick Saathoff 249

Bond Strength of Welded Wire Fabric in Concrete Bridge Decks.
Bilal M. Ayyub, Naji Al-Mutairi, and Peter Chang 252

Splicing Strength of Welded Steel Mesh in Concrete Bridge Decks.
Bilal M. Ayyub, Naji Al-Mutairi, and Peter Chang 253

DISCUSSIONS

Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design. Kazuhiko Kawashima, Shigeki Unjoh, and Meguru Tsunomoto.
By Mohammed Raoof. Closure by authors 254

Fracture Mechanics and Size Effect of Concrete in Tension. Tianxi Tang, Surendra P. Shah, and Chengsheng Ouyang.
By Zdeněk P. Bažant. By Mohammad T. Kazemi and Zdeněk P. Bažant. Closure by authors 255

ERRATA 256

TECHNICAL NOTE

Geometric Design of Compound Horizontal Curves.
B. K. Roy 67

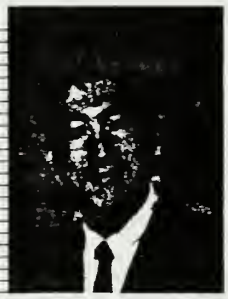
DISCUSSIONS

Unified Design of Horizontal Circular Curves. Said M. Easa.
By B. K. Roy. Closure by author 68

Yearly Variation of Directional Distribution of Highway Traffic. Satish C. Sharma.
By David K. Wanty. Closure by author 68

MBE
Minority • Business • Entrepreneur







6 **Acevedo's Way**—Raydean Acevedo has built one of the most sophisticated companies in the 8(a) program on a deceptively simple concept: investing in people.

14 **Different Drummers**—Keeping the customer satisfied is all in a day's work for these innovators.

22 **Is Your Business Franchise Material?**—These minority entrepreneurs found a winning formula for growth through franchising. Here's how to find out if you can, too.

36 **Use It or Lose It**—Face it: A good idea will always be imitated. How do you keep yours from running off with the competition?

42 **The Multiplier Effect**—Boise Cascade's second-tier purchasing program opens a whole new world of opportunities for minority and women suppliers.

48 **Charge It!**—Suppliers get paid faster with less paperwork through credit card purchasing.

51 **All Ohio Trade Fair**—Nearly 2,000 corporate procurement officials and minority business owners turned out to do business together in Cleveland.

52 **25 Years of Excellence**—The National Association of Minority Contractors celebrated its 25th anniversary in Oakland, California.

53 **Building on a Decade of Success**—The Airport Minority Advisory Council marked its 10th anniversary during its annual DBE compliance conference, held in Cleveland and co-hosted by the FAA.

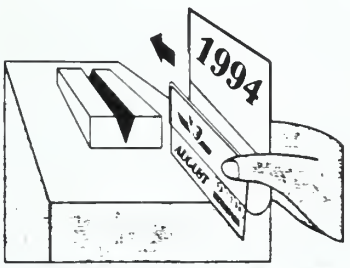
METRO®

Serving bus and rail transit & motorcoach operations since 1904

JULY / AUGUST 1994

Vol 90 No 4

22



Private industry has opportunities to take over some transit operations.

Departments

Letters	4
News	8
Suppliers & Services	18
Notes on a Farecard	20
People	56
Calendar	57
New Products	61
Metrobilia	63
Advertisers' Index	64
Classified Ads	65
Publisher's Perspective	68

Cover photo of ElDorado National's MST Model CNG bus in Las Vegas, NV. Inset is artist's rendering of Siemens LRV due for revenue service in Portland, OR.

METRO (ISSN (0162-8221) (USPS 834-2-700) is published bi-monthly with extra issue in October by Bobit Publishing Company, 2512 Artesia Boulevard, Redondo Beach, California 90278. The contents of this publication may not be reproduced either in part or whole without consent of Bobit Publishing Company. Please address ALL correspondence to the Editorial and Executive Offices at 2512 Artesia Boulevard, Redondo Beach, California 90278. Please address all subscription correspondence to Metro Magazine, P.O. Box 469009 Escondido, CA 92046-9009. Subscription prices: $25 per year; $34 for two years. Single copy $4, $25 for First Class. Canada $30 per year; $41 for two years. Foreign $38 per year; $51 for two years. Second Class postage paid at Redondo Beach, CA 90278-9988 and at additional mailing offices. Postmaster: Send address changes to Metro Magazine, P.O. Box 469009 Escondido, CA 92046-9009. Affiliated Publications: Automotive Fleet, Canadian Automotive Fleet, Auto Rental News, Bedbooks, Business Driver, Contemporary Orthopaedics, Contemporary Surgery, Fleet Financials, Installation News, Limousine & Chauffeur Guide, School Bus Fleet, Security Sales, Showcase USA. All statements made although based on information believed to be reliable and accurate cannot be guaranteed and no fault or liability can be accepted for error or omission.

Features

Privatization Is Alive and Well 22
From paratransit to commuter rail to entire urban bus systems, competitive contracting has its foot in the door.

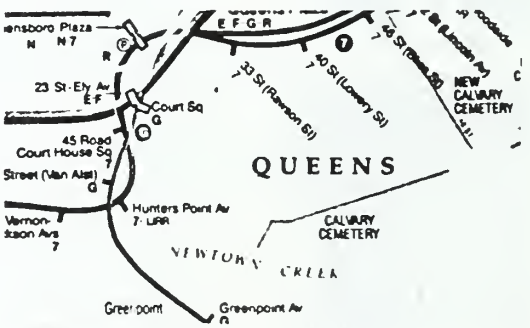
EXECUTIVE DIALOG
UITP's Laconte Wants Greater American Involvement 32
The CEO of the international transit association announces new North American committee.

Feds, Mayor Threaten New York's $9.6 Billion Capital Spending Plan 36
New railcars will be bought. Buses will be cleaner. Fare collection will be modernized. Tracks, signals, stations will be rehabilitated.

Transit, Motorcoach Are Given Big Boost in Next Millennium 46
The National Highway System proposal is really the first step toward connecting all forms of transportation on land, sea, air.

New Technology Showcase 50
A look at the industry's promising new technologies emphasizes passenger service.

Beware the Water Cops 52
The cost of complying with the Clean Water Act continues to rise, especially for maintenance facilities.



Gotham begins to see fruit from its capital plan.

36

Member

July 1994
Vol. 33, No. 6

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES

20 INDUSTRY FORUM: Why I'm an NPA Member
Genilee Swope Parente
Eight members from different divisions tell what they get from their NPA membership.

31 NPA '94: Discover the Magic in Learning
A special section highlighting the National Parking Association's 43rd International Convention & Trade Exposition

34 A Spectacular Lineup of Speakers

38 The NPA '94 Convention Program

40 The Best and Newest in Equipment and Technology

42 The Hotel, Spouse & Guest Tours and Travel Arrangements

44 The Many Attractions of the City of Magic

51 Convention Registration Form

53 Allied Division Showcase of Products & Services at the Trade Expo



ON THE COVER:
This issue of ***PARKING*** previews the wonders of NPA '94, from the impressive lineup of speakers to the wide array of products and exhibits featured during the trade expo. Also included is a vacation guide for those who want to plan their time in Orlando, the City of Magic.



August 1994
Vol. 33, No. 7

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES

23 Clustering Can Bring Customers Back Downtown
Dolores P. Palma & Doyle G. Hyett
Why shouldn't downtown America use a tool to gain the competitive edge that is built-in to most malls?

28 Parking is the Key Ingredient of Downtown Redevelopment
Richard S. Beebe
Some thoughts on how downtown redevelopment is affecting — and is affected by — the parking industry.

30 Outdoor Lighting Can Shine With Green Lights
The EPA has an incentive program designed to encourage companies to use environmentally friendly lighting.

32 Get the Most Out of Your Convention Experience *Richard G. Ensman, Jr.*
A convention can be both exciting and stressful. Thinking ahead about how you will handle the trip will benefit you once you arrive.

34 NPA 1994: Convention Program
Plan now for your visit to Orlando, FL, Sept. 18 to 22. Here are the superb business sessions NPA has planned.

36 INDUSTRY PROFILE: Mary S. Smith *Lou Cook*
Smith is a woman who has made it in a traditionally male world. She tells what her career path has been like.



ON THE COVER:
Finding ways to revitalize our downtowns is crucial to much of the parking industry. This issue of ***PARKING*** *explores alternatives and what they may mean.*

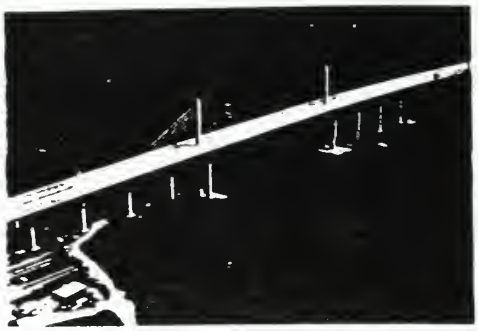




Volume 125, Number 8

Public Works.

July, 1994



33 Deicer with corrosion inhibitors keeps bridge deck safe



46 Special training benefits contract operations personnel

30. Another Public Works First for an Innovative City
Reduction of rain-dependent inflow and infiltration is accomplished by cured-in-place pipe lining process.

32. Town Improves Bulk Waste Collection
Mechanized system enhances employee safety and reduces inconvenience to citizens
ELLIS G. PERL

33. Deicer Plays Vital Role in Winter Bridge Maintenance
Sophisticated ice detection and deicer with corrosion inhibitors kept bridge open during severe winter.

34. Setting Up That Snowplow—A Pro Looks at the Do's and Don'ts
Tips from a snow equipment seminar instructor.

36. Large-Diameter Brick Sewer Rehabilitation
PVC lining system proved to be a cost-effective option.
KENNETH L. SALVAIL and B. JAY SCHROCK

38. Diamond Cutting is the 10-Minute Solution to Manhole Repair
Core drilling around a manhole cuts labor costs and results in a cleaner repair than jackhammering.

39. Microtunneling Solves Trunk Sewer Relocation
Water district relies on microtunneling to move sewer pipe out of harm's way
JOHN R. BARNES

40. Lehigh Tunnel 'Lights Up' with New Luminaires
Pennsylvania Turnpike tunnel features new graduated lighting.

41. Getting to the Airport on Time
Impending completion of one of the world's largest airports meant access roads had to be upgraded quickly.
LISA A. GOODBEE

43. Pedestrian Walkway Will Reduce Congestion
Enclosed walkway is expected to reduce traffic around Cleveland's new baseball stadium.
PIETER WYKOFF

44. Trenchless Technology Aids Sewer Installation
The County Sanitation Districts of Los Angeles County are major users of trenchless technology.

45. Retreaded Tires Keep the Plows Moving
Traction problems solved without using chains.

46. Contract Operations Provides Challenges and Opportunities for Plant Personnel
Employees should not be worried when treatment plant operations are shifted from a municipality to a private firm.
FRANK WILCOXON

48. Innovative Pavement Management System for Concrete Streets
Rating scale establishes replacement priorities.
WILLIAM C. HAWN and RONALD S. KRUSIE

50. Road Weather Information System Improves Traffic Safety
Pavement sensors and data processing technology generate forecasts.
GINGER M. JUHL

52. Manhole Rehab Counters Hydrogen Sulfide Attack
Polyethylene manhole reliners battle concrete deterioration.
ALLEN FESTERMAN

53. Park Management Withstands Budget Constraints
Park system is managed to provide the same facilities within increasingly tighter budgets.

55. How to Minimize Excavation Costs When Making Spot Repairs
A sonde and radiolocator are helping Austin, Texas find underground sewer breaks
BRUNO CONEGLIANO

August 1994

Railway Age









25 BN + Santa Fe: A new colossus of the west
If the merger goes through, it will create the largest system in the U.S. by f

30 FRA, FTA, FHWA: One team, one game plan
In a joint interview, DOT's three surface transportation chiefs discuss intermodalism.

42 Inside the Channel Tunnel
An in-depth look at Eurotunnel's Engineering Management System.

Special pull-out section:
1994 Car & Locomotive Repair Directory

45 Is positive train control worth $859 million?
FRA has plans for implementing PTC, but railroads want a further look.

49 Metro-North invests for growth
Well-equipped, well-run, well-patronized: M-N illustrates how the three go together.

57 Penn Station New York gets a transplant
The Claytor-Scannell Control Center is the 80-year-old facility's new "heart."

61 MetroLink: Harmon hits a home run
How Harmon successfully adapted main line rail signaling technology for St. Louis

62 Turkish transit, Toronto style
Ankara's metro will apply technology developed in North America

12 Rail Update
IC courts KCS; US&S crossing equipment; RoadRailer, The Supply Side.

18 Transit Update
High speed trust funds; first-class commuter cars; the 12X; In Transit

COMMENTARY

2 Inside
8 Lines on Labor
9 Watching Washington
10 Financially Speaking

DEPARTMENTS

4 Industry Outlook
6 The Railway Market
67 75/150 Years Ago
68 People
71 Products
72 Advertising Sales
74 Literature
79 Meetings
80 Advertisers Index
81 Professional Directory
82 Classified
88 World Update

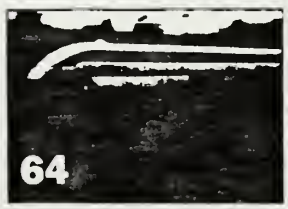
July 1994

Railway Age









28 At midyear '94, the good times roll
The national economy is recovering briskly, and railroads are outpacing it.

37 The Competitors: Santa Fe
37 Coming on strong.
42 Rob Krebs: "Low cost is imperative. The tie-breaker is quality."
48 Mechanical: How Santa Fe is fine tuning its motive power fleet.
50 C&S and M/W: Achieving traffic goals through greater capacity.
54 Purchasing & Materials Management: Innovative suppliers willing to share risks are wanted.

57 Whacking weeds with water
Hot water is showing promise as an alternative to chemical herbicides.

59 Are turbo trains the answer for high speed rail?
Two demonstration programs may break new ground for non-electrified lines.

64 Maglev is ready. Are we?
Germany seems ready to put the Transrapid to the revenue test

67 *Railway Age's* C&S Roundtable
New technology is presenting its own problems for both railroads and suppliers.

16 Rail Update
U.S. DOT's grade crossing program; Harriman Awards; more BN changes; REB expands; The Supply Side

24 Transit Update
Rail service returns to Cape May; Cuomo pressures MTA to settle strike; slippery light rail cars; In Transit.

COMMENTARY

2 Inside
8 Lines on Labor
9 Watching Washington
14 Financially Speaking
12 Marketing Advocate

DEPARTMENTS

4 Industry Outlook
6 The Railway Market
70 75/150 Years Ago
71 People
73 Meetings
74 Products/Literature
80 Letters
82 Advertising Sales
84 Advertisers Index
85 Professional Directory
86 Classified
92 World Update

Week of September 5, 1994

THE TRANSPORTATION AND LOGISTICS WEEKLY

No. 10, Vol. 239, Whole No. 4557

TRAFFIC WORLD



Table of Contents

COVER
Shippers urged to watch rates 11
Seminars on changes in law 12
ICC wraps up candy canes. 14
States eye intrastate challenge 14

MOTOR
TCPC plans fall seminars 19
IVHS group gets new name 19
Cardinal opens logistics unit 20
ICC nixes insurance firm. 20
Briefs 20

AIR
Carriers hail new Customs limits 22
DHL heavy cargo revenue up 23
Slattery to head Northwest Cargo 23
FedEx expands in S. America 24
More postal deals for TNT 24
Lufthansa says cargo up 24
Atlas doubling Hong Kong service 24

WATER
ILA faces increasing pressure 25
Briefs 26
Calif. extends heavy truck limit 27
San Diego faces reefer test 28
Hanjin goes to North Atlantic 28

RAIL
Landmark CSXT, TCU deal 30
ICC eyes exempting recyclables 31
Only 2 roads revenue adequate 31
Rail tons 32
Briefs 32

INTERNATIONAL
EU's secondary ports reach out 33
Canada shortlines win ruling 34
Grain shippers fear car shortage 35
Briefs 35

DEPARTMENTS
Q&A 36
Personal News 38
ICC Digest of Orders 40
Update 42
Market Report 43
Back Page 47

Inside

White House Steps In
The White House named a Presidential Emergency Board and imposed a 60-day cooling off period after the United Transportation Union threatened to expand its walkout against the Soo Line. **8**



Teamsters, Carriers Cooperate
The Big Three LTL carriers unveiled major changes allowed under the National Master Freight Agreement and the Teamsters said OK. **17**



If You Can't Beat 'Em ...
Nagged by losses and strong inroads from startups, some airlines have turned to employee ownership as the path to labor peace. **21**



Brothers at Arms?
The Brotherhood of Locomotive Engineers' decision to cross United Transportation Union picket lines reignites long enmity between the two rail unions. **29**

Cover by Trans Pixs and Paul Page

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON MA 02116

TRANSPORTATIO JOURNA

SUMMER 1994 / VOL. 33 / No. 4

ARTICLES Pa

U.S. Motor Carrier Perspectives on Trucking to Mexico
RAFAEL J. VALDES
MICHAEL R. CRUM

Evaluating Service Quality and Productivity in the Regional Airline Industry
LAWRENCE J. TRUITT
RAY HAYNES

Measuring the Direct Impacts of a Port
JOSEPH S. DeSALVO

Labor Reform in the Australian Merchant Marine: An Analysis of Recent Progress
RICHARD MORRIS

The Occurrence of Statistical Economies of Scale in Intermodal Transportation
PHILIP T. EVERS

BOOK REVIEW

Frank N. Wilner. *Comes Now the Interstate Commerce Practitioner*
GREGORY M. KELLAR

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

SEP 1 9 9 4
MA
PB METER 7008230
0.75
U.S. POSTAGE

Leonard Adams-Gov. Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

TSS. STL 1.3 : 1994 /no. 5

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISTIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

GOVERNMENT DOCUMENTS
COLLECTION

JAN 10 1995

University of Massachusetts
Depository Copy

September • October • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

IL
152.3
.C66
C66
1990

ID
886.5
.I724
1992

ID
886.
.I72
1980

ID
886.
.054
U72
1993

AGED AUTOMOBILE DRIVERS--UNITED STATES--CONGRESSES.

TL
152.3
.C66
C66
1990

Conference on Research and Development Needed to Improve Safety and Mobility of Older Drivers (1989 : Bethesda, Md.)
Conference on Research and Development Needed to Improve Safety and Mobility of Older Drivers : August 23-24, 1989, Lister Hill Conference Center, National Library of Medicine, Bethesda, Maryland. -- [Washington, D.C.] : National Highway Traffic Safety Administration, [1990?]
iii, 95, [10] p. ; 28 cm.
1. Aged automobile drivers--United States--Congresses. 2. Traffic safety --United States--Congresses.

22923241 TLBAsc

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886.5
.I724
1992

Transportation and air quality / sponsored by the Office of Policy Development, Office of Environment and Planning, and the Office of Traffic Management and Intelligent Vehicle-Highway Systems, Federal Highway Administration. -- Washington, D.C. : Federal Highway Administration, [1992]
(Searching for solutions. A policy discussion series ; no. 5)

1. Air quality management--United States. 2. Air--Pollution--United States.

28600741 TLBAsc

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886.5
.T725
1990

Transportation control measures : state implementation plan guidance / prepared by Douglas S. Eisinger ... [et al.]. -- San Rafael, Calif. : Systems Applications International, [1990]
xiii, 160, [78] p. : charts ; 28 cm.
SIRN: EPA-450/2-89-020

1. Air quality management--United States. 2. Automobiles--United States --Motors--Exhaust gas. 3. Urban transportation--United States--Management. 4. Choice of transportation.

23894880 TLBAsc

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886.5
.U54
U72
1993

United States. General Accounting Office.
Urban transportation : reducing vehicle emissions with transportation control measures : report to Congressional requesters / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
44 p. : ill. ; 28 cm.
1. Transportation--Environmental aspects--United States. 2. Air quality management--United States. 3. United States. Intermodal Surface Transportation Efficiency Act of 1991. 4. Automobiles--Pollution control devices.

28602692 TLBAsc

AIRLINES--CERTIFICATION--UNITED STATES.

TL
671
.U54
A57
1993

United States. General Accounting Office.
Aircraft certification : new FAA approach needed to meet challenges of advanced technology : report to the Chairman, Subcommittee on Aviation, Committee on Public Works and Transportation, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
75 p. : ill. ; 28 cm.

28953131 TLBAsc SEE NEXT CRD

AIRPORTS--UNITED STATES--SECURITY MEASURES.

HE
9787.4
.S4
A943
1994

United States. General Accounting Office.
Aviation security : additional actions needed to meet domestic and international challenges : report to congressional requesters / United States General Accounting Office. -- Washington, DC : The Office, 1994.
53 p. ; 28 cm.

1. Airports--United States--Security measures. 2. International airports--Security measures. 3. United States. Federal Aviation Administration.

30094837 TLBAsc

AMTRAK--AUDITING.

HE
2791
.A3
U546
1993

United States. General Accounting Office.
Amtrak safety : Amtrak should implement minimum safety standards for passenger cars : report to the Chairman, Information, Justice, Transportation, and Agriculture Subcommittee, Committee on Government Operations, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
35 p. ; 28 cm.
1. Amtrak--Auditing. 2. Railroads--United States --Safety measures. 3. Railroads--Safety regulations--United States.

28910211 TLBAsc

ASPHALT CONCRETE--TESTING.

HE
131
.I687sy
no.187

Halstead, Woodrow J.
Rapid test methods for asphalt concrete and portland cement concrete / Woodrow J. Halstead. -- Washington, D.C. : National Academy Press, 1993.
47 p. ; 28 cm. -- (Synthesis of highway practice, ISSN 0547-5570 ; 187)
ISBN 0-309-05311-0

1. Asphalt concrete--Testing. 2. Concrete--Testing. 3. Portland cement --Testing.

29342829 TLBAsc 93-60012

AUTOMOBILE DRIVING--AUTOMATION.

TE
228.3
.R68
1988

Route guidance and in-car communication systems : report / prepared by an OECD scientific experts group. -- Paris : Organisation for Economic Co-operation and Development ; Washington, D.C. : OECD Publications and Information Centre [distributor], 1988.
104 p. : ill. ; 27 cm. -- (Road transport research)
ISBN 9264130462 (pbk.)

1. Automobile driving--Automation. 2. Highway communications. 3. Automobiles--Electronic equipment. 4. Automobiles--Instruments--Display systems.

17696663 TLBAsc 88-176582

AUTOMOBILE INDUSTRY AND TRADE--UNITED STATES.

HD
9710
.M46
A97
1992

Mendelowitz, Allan I.
Automotive industry : the competitive challenge to U.S. companies : statement of Allan I. Mendelowitz, director, International Trade, Energy, and Finance Issues, National Security and International Affairs Division, before the Task Force on Urgent Fiscal Issues, Committee on the Budget, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
18 p. ; 28 cm. -- (Testimony ; GAO/T-NSIAD-92-7)

25664428 TLBAsc SEE NEXT CRD

AUTOMOBILES--AUTOMATIC CONTROL.

TL
272.5
.G74
A97
1991

Griswold, Norman C.
An autonomous vehicle-constrained test and evaluation / by Norman C. Griswold. -- College Station, Tex. : Texas Transportation Institute, [1991]
ii, 52 p. : ill. ; 28 cm. -- (Research report ; 1245-1)
STRN: TX-92/1245-1

1. Automobiles--Automatic control. 2. Computer vision.

26918713 TLBAsc

AUTOMOBILES--SAFETY APPLIANCES--TESTING.

TL
285
.D83
E92
1992

Duffy, J. Stephen.
Evaluation of front seat back force/deflection characteristics / [J. Stephen Duffy]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; Springfield, Va. : Available from the National Technical Information Service, [1992]
v, 46 p. : ill. ; 28 cm.
STRN: DOT HS 808 007

1. Automobiles--Safety appliances--Testing. 2. Child restraint systems in automobiles--Testing. 3. Automobiles--Crashworthiness--Testing.

28919890 TLBAsc

BICYCLE COMMUTING--EUROPE.

GV
1043.7
.N37
no.16

Wynne, George.
A study of bicycle and pedestrian programs in European countries / prepared by George Wynne under contract with the Federal Highway Administration. -- Washington, DC : Federal Highway Administration, 1992
52 p. ; 28 cm. -- (National bicycling and walking study ; Case study no. 16)

1. Bicycle commuting--Europe. 2. Cycling--Europe. 3. Walking--Europe. 4. Choice of transportation--Europe.

30415155 TLBAsc

BICYCLE COMMUTING--UNITED STATES--SAFETY MEASURES.

GV
1043.7
.N37
no.12

Cleven, Arlene M.
Incorporating consideration of bicyclists and pedestrians into education programs / [by Arlene M. Cleven and Richard D. Blomberg of Dunlap and Associates, Inc.]. -- [Washington, D.C.?] : Federal Highway Administration, [1992?]
iv, 58 p. ; 28 cm. -- (National bicycling and walking study ; Case study no. 12)
STRN: FHWA-PD-92-036
1. Cycling--United States--Safety measures. 2. Walking--United States--Safety measures. 3. Bicycle commuting--United States--Safety measures. 4. Choice of transportation.

30431908 TLBAsc

BICYCLE PARKING--UNITED STATES.

GV
1043.7
.N37
no.9

Replogle, Michael A.
Linking bicycle/pedestrian facilities with transit : enhancing bicycle and pedestrian access to transit / [by Michael Replogle and Harriet Parcells ; additional assistance was provided by the National Association of Railroad Passengers]. -- [Washington, DC] : Federal Highway Administration, [1992]
ii, 102 p. : ill. ; 28 cm. -- (National bicycling and walking study ; Case study no. 9)
STRN: FHWA-PD-93-012

30432115 TLBAsc SEE NEXT CRD

BICYCLE TOURING--MASSACHUSETTS--BOSTON METROPOLITAN AREA--GUIDEBOOKS.

REF.
GV
1045.5
.M4
S76
1991

Stone, Howard, 1937-
Short bike rides in greater Boston and central Massachusetts / by Howard Stone. -- 3rd ed. -- Chester, Ct. : Globe Pequot Press, c1991.
xiv, 583 p. : ill. ; 18 cm.
ISBN 0-87106-162-7

1. Bicycle touring--Massachusetts--Boston Metropolitan Area--Guidebooks. 2. Bicycle touring--Massachusetts--Guidebooks. 3. Boston Metropolitan Area (Mass.)--Guidebooks. 4. Massachusetts--Guidebooks.

23584306 TLBAsc 91-630r92

BICYCLE TOURING--NEW ENGLAND--GUIDEBOOKS.

REF.
GV
1045.5
.A11
F37
1975

Farny, Michael H.
New England over the handlebars : a cyclist's guide / Michael H. Farny. -- 1st ed. -- Boston : Little, Brown, c1975.
xii, 174 p. : ill. ; 23 cm.
ISBN 0-316-27465-8

1. New England--Tours. 2. Bicycle touring--New England--Guidebooks.

1502590 TLBAsc 75-19265r923

BICYCLE TRAILS--UNITED STATES.

GV
1043.7
.N37
U0.7

Transportation potential and other benefits of off-road bicycle and pedestrian facilities / [by Greenways Incorporated] ; prepared for theFederal Highway Administration. -- [Washington, D.C.?] : Federal Highway Administration, [1992]
iv, 72 p. (in various pagings) : ill. ; 28 cm. -- (National bicycling and walking study ; Case study no. 7)
STRN: FHWA-PD-92-040
1. Bicycle trails--United States. 2. Pedestrian areas--United States. 3. Bicycle commuting--United States. 4. Cycling--United States. 5. Walking--United States. 6. Choice of transportatio n.

30413816 TLBAsc

BRIDGE RAILINGS--TESTING.

TG
153
.R3
R68
1992

Ross, Hayes E.
Bridge railing and treatments at intersecting streets and drives / by Hayes E. Ross, Jr., Roger P. Bligh and Christopher Boyd Parnell. -- College Station, Tex. : Texas Transportation Institute ; [Springfield, Va. : Available through the National Technical Information Service, 1992]
xxiii, 344 p. : ill. ; 28 cm. -- (Research report ; 1263-1)
STRN: FHWA TX-91/92-1263-1F
1. Bridge railings--Testing. 2. Bridge railings--Design and construction. 3. Roads--Guard fences--Testing. 4. Roads--Guard fences--Design and co nstruction.

30332245 TLBAsc

BRIDGES, BOX GIRDER--RESEARCH--OHIO.

TG
362
.H82
I58
1993

Huckelbridge, Arthur A. (Arthur Allen)
An investigation of load transfer in multi-beam prestressed box girder bridges / by Arthur A. Huckelbridge, Jr., Hassan El-Esnawi, Fred Moses. -- [Cleveland, Ohio] : Case Western Reserve University, Dept. of Civil Engineering ; Springfield, Va. : Available to the public through th National Technical Information Service, [1993]
ix, 98 p. : ill. ; 28 cm.
STRN: FHWA/OH-94/002

1. Bridges, Box girder--Research--Ohio.

30210044 TLBAsc

BRIDGES, CONCRETE--CRACKING--OHIO.

TG
325.6
.L36
A87
1993

Lankard, David R.
Assessment of d-cracking and cement-aggregate reactions in ODOT reinforced concrete bridge structures / [David Lankard], Lankard Materials Laboratory. -- Columbus, Ohio : Lankard Materials Laboratory ; Springfield, Va. : Available through National Technical Information Service, [1993]
67 p. : ill., maps ; 28 cm.
STRN: FHWA/OH-93/019
1. Bridges, Concrete--Cracking--Ohio. 2. Bridges, Concrete--Ohio--Maintenance and repair. 3. Pavements, Concrete--Cracking--Ohio. 4. Bridges, Concrete--Floors--Maintenance and repair.

29555464 TLBAsc

BRIDGES, CONCRETE--FLOORS--CATHODIC PROTECTION--TEXAS--BIG SPRING--EVALUATION.

TG
325.6
.P77
I54
1992

Parker, Harry W.
Initial analysis of cathodic protection systems on US 87 railroad overpass bridge, Big Spring, Texas / Harry W. Parker, Phillip I. Nash, Robert W. Feingold. -- Lubbock, TX : College of Engineering, Texas Tech University ; [Springfield, VA : Available through the National Technical Information Service, 1992]
v, 65 leaves : ill. ; 28 cm. -- (Research study ; no. 1-10-85-500)

30494027 TLBAsc SEE NEXT CRD

BRIDGES, CONCRETE--FLOORS--CORROSION.

TG
335
.W54
C66
1993

Whiting, D. (David)
Condition of prestressed concrete bridge components : technology review and field surveys / [D. Whiting, B. Stejskal, M. Nagi]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service], 1993.
xvi, 270 p. : ill. ; 28 cm.
STRN: FHWA-RD-93-037

1. Bridges, Concrete--Floors--Corrosion. 2. Bridges, Concrete--Corrosion. 3. Prestressed concrete construction--Corrosion.

29431665 TLBAsc

BRIDGES--WELDED JOINTS--TESTING.

HE
131
.T687o
no.354

Resistance of welded details under variable amplitude long-life fatigue loading / J.W. Fisher ... [et al.]. -- Washington, D.C. : Transportation Research Board, National Research Council : National Academy Press, 1993.
32 p. : ill. ; 28 cm. -- (Report / National Cooperative Highway Research Program, ISSN 0077-5614 ; 354)
ISBN 0-309-05352-8

1. Bridges--Welded joints--Testing. 2. Bridges--Welded joints--Cracking. 3. Welded joints--Fatigue.

28471080 TLBAsc 93-60200

BUS STOPS--LOCATION.

HE
5623
.L62
1992

The Location and design of bus transfer facilities / prepared by ITE Technical Council Committee 5C-1A, chaired by Paul C. Box. -- Washington, D.C. : Institute of Transportation Engineers ; c1992
v, 55 p. : ill. ; 28 cm. -- (ITE Publication ; no. IR-024A)

1. Bus stops--Location. 2. Bus stops--Design and construction. 3. Bus terminals--Location. 4. Bus terminals--Design and construction.

TLBAsc

BUSES--ACCESS FOR THE PHYSICALLY HANDICAPPED.

IL
232
.W53
1993

Wheelchair/occupant securement system (California) : final report / prepared for California Department of Transportation, Office of Planning and Full-Mobility Assistance ; prepared by Louis Cheng ... [et al.]. -- Menlo Park, Calif. : Failure Analysis Associates ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
vi, 96 leaves : ill. ; 28 cm.
STRN: FTA/DMI CA-08-PB93-140747
1. Buses--Access for the physically handicapped. 2. Wheelchairs--Safety measures. 3. Physically handicapped--California--Transportation--Safety measures.

29633220 TLBAsc

BUSES--AUTOMATIC LOCATION SYSTEMS.

IE
228.3
.M67
A38
1993

Morlok, Edward K.
Advanced vehicle monitoring and communication systems for bus transit : benefits and economic feasibility / Edward K. Morlok, Eric C. Bruun and Kimberly J. Battle Blackmon. -- Washington, DC : U.S. Federal Transit Administration, University Research and Training Program : Distributed in cooperation with Technology Sharing Program, [1993]
ix, 72 p. : ill. ; 28 cm.
1. Buses--Automatic location systems. 2. Buses--Electronic equipment. 3. Buses--Technological innovations. 4. Intelligent Vehicle Highway Systems.

29957440 TLBAsc

BUSES--FUEL SYSTEMS.

TP
360
.M87
P76
1992

Murphy, M. J. (Michael John), 1948-
Properties of alternative fuels / prepared by Michael J. Murphy (Battelle) ; to Office of Technical Assistance & Safety, Federal Transit Administration. -- [Washington, D.C.] : Federal Transit Administration, [1992]
[22] leaves ; 28 cm.

1. Buses--Fuel systems. 2. Buses--Motors (Compressed-gas). 3. Internal combustion engines, Spark ignition--Alternate fuels. 4. Methanol as fuel. 5. Gasoline, Synthetic. 6. Motor fuels--Additives. 7. Synthetic fuels.

28284617 TLBAsc

BUSES--MAINTENANCE AND REPAIR.

TL
232.4
.B87
1993

Bus support facilities : conditions and needs / prepared by ATE Management and Service Company, Inc. -- [Washington, D.C.] : Federal Transit Administration, Office of Policy, [1993]
ca. 150 p. in various pagings : ill. ; 28 cm.

1. Buses--Maintenance and repair. 2. Bus lines--Management.

28392948 TLBAsc

CIVIL ENGINEERING--VOCATIONAL GUIDANCE.

HE
131
.T687n
no.347
pt.2

Mason, John M. (John Michael), 1950-

Civil engineering careers : a user's guide for awareness, retention, and curriculum programs / J.M. Mason and L.M. Kostival. -- Washington, DC : National Academy Press, 1994.
[vi], 107 p. ; 28 cm. -- (Report / National Cooperative Highway Research Program, ISSN 0077-5614 ; 347, part II.)
ISBN 0-309-05362-5

1. Civil enginers. 2. Civil engineering--Vocational guidance.

30372062 TLBAsc 94-60167

COMPUTER SOFTWARE--CATALOGS.

REF.
QA
76.755
.D57

Directory of U.S. government software for mainframes and microcomputers / prepared by the Federal Computer Products Center, National Technical Information Service, Technology Administration, U.S. Department of Commerce. -- 1992- . --
Springfield, VA : U.S. Dept. of Commerce, National Technical Information Service, 1992-
v. ; 28 cm.
Annual.
Spine title: Directory of U.S. government software.
Continues: Directory of computer software.
ISSN 1063-9 748 = Directory of U.S. governme nt software for mainframes an d microcomputers

25473394 TLBAsc SEE NEXT CRD

CONCRETE PILING.

TE
211
.Y43
A94
1993

Yee, Wilfred S.
Axial load testing of 3-ft diameter drilled shafts at the Century Freeway in Los Angeles, California : final report / principal investigators, Wilfred S. Yee, Suneel Vanikar ; report prepared by Clifford J. Roblee, Wilfred S. Yee ; State of California, Department of Transportation, Division of New Technology, Materials and Research, Office of Geotechnical Engineering. -- [Sacramento] : Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
x, 149 p. : ill. (some folded) ; 28 cm.

29173457 TLBAsc SEE NEXT CRD

CONSTRUCTION INDUSTRY--AUTOMATION.

HE
131
.T687r
no.1406

Construction robotics and automation, and foundations engineering / Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1993.
v, 141 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1406)
ISBN 0-309-05553-9

1. Construction industry--Automation 2. Roads--Embankments. 3. Soils--Testing. 4. Pavements--Subgrades.

30091228 TLBAsc

DBASE IV (COMPUTER FILE)

A-V
QA
76.9
.D3
U84
1992

Using dBASE IV advanced [videorecording]. -- Pryor, OK : ViaGrafix, [1992?]
1 videocassette : sd., col. ; 1/2 in. + 1 computer disk. -- (ViaGrafix video training series)
ISBN 0-922264-01-5

1. dBASE IV (Computer file) 2. Data base management.

27116111 TLBAsc

CRASH INJURIES--SIMULATION METHODS.

TL
242
.O73
C65
1993

Ore, Lisa.
Composite rib development / [Lisa Ore and Roger Saul]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; Springfield, Va. : Available through the National Technical Information Service, [1993]
x, 105 p. : ill. ; 28 cm.
SIRN: DOT HS 808 021

1. Crash injuries--Simulation methods. 2. Ribs. 3. Anthropometry.

29218000 TLBAsc

DRINKING AND TRAFFIC ACCIDENTS--RESEARCH--UNITED STATES.

HE
131
.T687c
no.413

Alcohol and other drugs : their role in transportation. -- Washington, D.C. : Transportation Research Board, [1993]
30 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 413 (Aug. 1993))

1. Drinking and traffic accidents--Research--United States. 2. Aeronautics--United States--Accidents. 3. Transportation--Research--United States. 4. Alcoholism--Research--United States. 5. Drug abuse--Research--United States.

28905321 TLBAsc

CYCLING--MINNESOTA--PLANNING.

GV
1045.5
.M6
C65
1992

The Comprehensive state bicycle plan / developed ... by the Minnesota Department of Transportation ... under the auspices of the State Bicycle Advisory Board ... [et al.]. -- St. Paul, Minn. : Minnesota Dept. of Transportation, 1992.
[2], 87 p. : ill. ; 28 cm.

1. Cycling--Minnesota--Planning. 2. Bicycle commuting--Minnesota--Planning.

26092215 TLBAsc

ELECTRIC RAILROADS--UNITED STATES--POWER SUPPLY.

HE
4421
.U33
A47
1992

Uher, Richard A.
Alternative electric energy sources for rail transit : final report, phase I / Richard A. Uher, John Howard. -- Washington, D.C. : Federal Transit Administration, Office of Technical Assistance and Safety ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xii, 281 p : ill. ; 28 cm.
SIRN: FTA-PA-06-0120-93-1
1. Electric railroads--United States--Power supply. 2. Electric railroads--United States--Energy consumption. 3. Electric railroads--United States--Cost of operation.

29249083 TLBAsc

DBASE IV (COMPUTER FILE)

A-V
QA
76.9
.D3
I57
1993

Introduction to dBase IV [videorecording]. -- Version 2.0. -- Pryor, OK : ViaGrafix, 1993.
1 videocassette : sd., col. ; 1/2 in. + 1 computer disk (3 1/2 in.). -- (ViaGrafix video training series)
ISBN 0-922264-01-5

1. dBase IV (Computer file) 2. Data base management.

29695740 TLBAsc

ENVIRONMENTAL PROTECTION--UNITED STATES--INFORMATION SERVICES--DIRECTORIES.

REF.
Z
675
.E75
U54

United States. Environmental Protection Agency.
Access EPA. -- 1991 ed.- . -- Washington, DC : Information Access Branch, Information Management and Services Division, U.S. Environmental Protection Agency : For sale by the Supt. of Docs., U.S. G.P.O., [1991-
v. ; 23 cm.
Annual.

24771439 TLBAsc SEE NEXT CRD

FATIGUE--PREVENTION.

BF
482
.M33
Y682
1990

McGee-Cooper, Ann.
You don't have to go home from work exhausted! : the energy engineering approach / by Ann McGee-Cooper ; with Duane Trammell & Barbara Lau. -- Dallas : Bowen & Rogers, c1990.
xxiii, 349 p. : ill. ; 27 cm.
ISBN 0-8625617-0-3

1. Fatigue--Prevention. 2. Mental fatigue--Prevention. 3. Burn out (Psychology)--Prevention. 4. Success--Psychological aspects. 5. Success in business. 6. Vitality.

22685208 TLBAsc 90-80410r922

HELICOPTERS--CONGRESSES.

HE
131
.T687c
no.400

Helicopter Operator Economics Workshop (1991 : Irvine, Calif.)
Helicopter operator economics : workshop report : National Academies of Sciences and Engineering, Beckman Center, Irvine, California, November 12-13, 1991. -- Washington, D.C. : Transportation Research Board, [1992]
48 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 400 (Oct. 1992))

1. Helicopters--Congresses. 2. Aeronautics, Commercial--Congresses. 3. Airlines--Finance--Congresses. 4. Helicopter industry--Congresses.

26964725 TLBAsc

FEDERAL AID TO TRANSPORTATION--UNITED STATES.

HE
4351
.U54
F43
1992

United States. General Accounting Office.
Federal Transit Administration grant management / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20877) : The Office [distributor, 1992]
39 p. ; 23 cm. -- (High-risk series ; GAO/HR-93-16)

1. Federal aid to transportation--United States. 2. Local transit--United States--Finance. 3. United States. Federal Transit Administration --Management.

27262588 TLBAsc

BIGH OCCUPANCY VEHICLE LANES--NORTH AMERICA.

HE
336
.B4
I874
1992

Turnbull, Katherine F.
An assessment of high-occupancy vehicle facilities in North America : executive report / Katherine F. Turnbull ; sponsored by Texas Department of Transportation in cooperation with Federal Transit Administration, United States Department of Transportation. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System, [1992]
xv, 77 p. : ill., maps ; 28 cm. -- (Technical report ; 925-5F)
1. Bigh occupancy vehicle lanes--North America.

28387316 TLBAsc 93-242540

GRAY MARKET.

HD
9710
.U55
G72
1992

United States. General Accounting Office.
Gray market vehicle program : extension warranted, but improvements in vehicle identification are needed : report to Congressional committees / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1993]
55 p. : ill. ; 28 cm.

1. Gray market. 2. Imports. 3. Automobiles--Safety measures--Government policy--United States.

29585505 TLBAsc

BIGHWAY COMMUNICATIONS--NORTH CAROLINA--CHARLOTTE.

TE
228.3
.H37
U84
1989

Hartgen, David T.
Using the media to encourage changes in urban travel behavior / by David T. Hartgen and Mark A. Casey. -- Charlotte, NC : University of North Carolina at Charlotte, [Transportation Academy, 1989]
23, [7] p. ; 28 cm. -- (Transportation publication report ; no. 10)
1. Commuting--North Carolina--Charlotte--Public opinion. 2. Traffic congestion--North Carolina--Charlotte. 3. Advertising, Public service--North Carolina--Charlotte. 4. Bighway communications--North Carolina--Charlotte.

21142651 TLBAsc

BAZARDOUS WASTES--TRANSPORTATION.

HE
131
.T687n
no.351

Hazardous wastes in highway rights-of-way / Committee on Hazardous Wastes in Highway Rights-of-Way. -- Washington, D.C. : National Academy Press, 1993.
114 p. : ill. ; 28 cm. -- (NCHRP report, ISSN 0077-5614 ; 351)
ISBN 0-309-04874-5

1. Bazardous wastes--Transportation. 2. Roads--Right of way.

29180405 TLBAsc

BIGHWAY DEPARTMENTS--EMPLOYEES--SALARIES, ETC.--UNITED STATES--STATISTICS.

HE
131
.T687c
no.420

Progress report on maintenance and operations personnel. -- Washington, D.C. : Transportation Research Board, National Research Council, [1994]
46 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 420 (Mar. 1994))

1. Bighway departments--United States--Employees x Statistics. 2. Highway departments--Employees--Salaries, etc.--United States--Statistics.

30372113 TLBAsc

INTELLIGENT VEHICLE HIGHWAY SYSTEMS--RESEARCH--EUROPE.

TE
228.3
.P37
1992

Participants report : IVHS European study tour, October 28-November 8, 1991 / conducted by the Institute of Transportation Engineers. -- [Washington, D.C.] : Institute of Transportation Engineers, c1992.
1 v. (various pagings) : ill. ; 28 cm.

1. Highway communications--Research--Europe. 2. Intelligent Vehicle Highway Systems--Research--Europe.

29859712 TLBAsc

INTELLIGENT VEHICLE HIGHWAY SYSTEMS--RESEARCH--UNITED STATES.

HE
131
.T687c
no.411

Communicating with vehicles : IVHS research and operational test requirements. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
35 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 411)

1. Highway communications--Research--United States. 2. Intelligent Vehicle Highway Systems--Research--United States.

24 MAY 94 28930666 TLBAsc

INTERSTATE 495 (MASS.)

HE
356.5
.B711
P76
1993

Proposed I-495 interchange project : draft environmental impact statement, draft environmental impact report / submitted ... by the U.S. Dept. of Transportation, Federal Highway Administration ; and Massachusetts Highway Dept. -- [Cambridge, Mass. : Federal Highway Administration], 1993.
2 v. : ill., maps ; 28 cm.

1. Interstate 495 (Mass.) 2. Roads--Massachusetts--Marlborough--Interchanges and intersections.

TLBAsc

LOCAL TRANSIT--ECONOMIC ASPECTS--CALIFORNIA--LOS ANGELES.

HE
4491
.L7
C66
1985

Community Redevelopment Agency of the City of Los Angeles.
Economic analysis of Metro Rail benefit assessment in downtown Los Angeles / the City of Los Angeles Community Redevelopment Agency with technical assistance by Kotin, Regan & Mouchly. -- [Los Angeles] : The Agency, [1985]
46 p. : ill. ; 28 cm.

1. Central business districts--California--Los Angeles. 2. Local transit--Economic aspects--California--Los Angeles.

24500023 TLBAsc

LOCAL TRANSIT--INFORMATION SERVICES.

HE
4371
.B43
C67
1993

Behnke, Robert W.
Cost estimates for selected California Smart Traveler operational tests. Volume 1, Technical report / Robert W. Behnke (Aegis Transportation Information Systems, Inc.). -- Washington, D.C. : Federal Transit Administration, Office of Technical Assistance and Safety : Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1993]
ii, 47 p. : ill. ; 28 cm.
1. Paratransit services--Information services. 2. Local transit--Information services. 3. Audiotex. 4. Videotex systems.

29173894 TLBAsc

NON-DESTRUCTIVE TESTING.

HE
131
.T687r
no.1415

Field performance of structures and nondestructive evaluation of subsurface infrastructure. -- Washington, D.C. : National Academy Press, 1993.
v, 103 p. : ill. ; 28 cm. -- (Transportation research record ; 1415)
ISBN 0-309-05564-4

1. Non-destructive testing. 2. Soil mechanics. 3. Culverts. 4. Bridges. 5. Pipe lines.

30336907 TLBAsc

OS/2 (COMPUTER FILE).

A-V
QA
76.76
.O63
O67
1993

Optimizing OS/2 for Hot Performance [videorecording]. -- Pryor, OK : ViaGrafix, c1993.
1 videocassette (ca 50 min.) : sd., col.; 1/2 in. + 1 computer disk (3 1/2 in.). -- (ViaGrafix video training series)

1. OS/2 (Computer file). 2. Operating systems (Computers)

29432914 TLBAsc

PAGEMAKER (COMPUTER FILE)

A-V
Z
253.532
.P333
I57
1993

Introduction to PageMaker 5.0 [videorecording]. -- Pryor, OK : ViaGrafix, c1993.
1 videocassette (ca. 70 min.) : sd., col. ; 1/2 in. + 1 computer disk (3 1/2 in.). -- (ViaGrafix video training series)

1. PageMaker (Computer file) 2. Desktop publishing.

29947137 TLBAsc

PAVEMENTS, ASPHALT--ADDITIVES--TESTING.

TE
270
.S78
A86
1993

Stuart, Kevin D.
Asphalt mixtures containing chemically modified binders / [K.D. Stuart]. -- McLean, Va. : Federal Highway Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
iv, 52 p. : ill. ; 28 cm.
STRN: FHWA-RD-92-101

1. Pavements, Asphalt--Additives--Testing. 2. Binders (Materials)--Evaluation.

28602762 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR--MANAGEMENT--CONGRESSES.

TE
5
.I57
I57
1994

International Conference on Managing Pavements (3rd : 1994 : San Antonio, Tex.)
Third International Conference on Managing Pavements : [proceedings] : San Antonio, Texas, May 22-26, 1994 / sponsored by Transportation Research Board [et al.]. -- Washington, D.C. : National Academy Press, 1994.
3 v. : ill. ; 28 cm. -- (Conference proceedings ; 1)
ISBN 0-309-05502-4
1. Pavements--Maintenance and repair--Management--Congresses. 2. Pavements--Design and construction--Management--Congresses.

27 MAY 94 30498454 TLBAsc

PAVEMENTS--SUBGRADES--TESTING.

TE
270
.M37
U83
1991

Maser, Kenneth R.
Use of radar technology for pavement layer evaluation/ c by K.R. Maser, T. Scullion, R.C. Briggs. -- College Station, Tex. : Texas Transportation Institute, Texas A & M University System, [1991]
x, 19 p. ; 28 cm. -- (Research report ; 0930-5F)

1. Pavements--Subgrades--Testing. 2. Pavements--Subgrades--Evaluation. 3. Ground penetrating radar.

27196977 TLBAsc

PAVEMENTS--TESTING.

HE
131
.T687r
no.1418

Performance-related testing and evaluation of characteristics of aggregates and new geomaterials. -- Washington, D.C. : National Academy Press, 1993.
v, 66 p. : ill. ; 28 cm. -- (Transportation research record ; 1418)
ISBN 0-309-05566-0

1. Pavements--Testing. 2. Aggregates (Building materials)--Testing.

30388321 TLBAsc

PHYSICALLY HANDICAPPED--TRANSPORTATION.

HE
131
.T687c
no.415

Private vehicle access for people with disabilities : policy issues, opinions, research. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
15 p. : ill ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 415)

1. Physically handicapped--Transportation. 2. Physically handicapped automobile drivers. 3. Automobiles for the physically handicapped.

29454033 TLBAsc

PORTLAND TO BOSTON CORRIDOR.

HE
2771
.M2
V36
1993

Vanasse Hangen Brustlin, Inc.
Restoration of passenger rail service : Portland, Maine to Boston, Massachusetts / prepared by Vanasse Hangen Brustlin, Inc. -- [Augusta, Me.] : Me. Dept. of Transportation, 1992-1993.
6 v. : ill., maps ; 28 cm.

1. Railroads--Maine--Passenger traffic. 2. Railroads--Massachusetts--Passenger traffic 3. Railroads--New Hampshire--Passenger traffic. 4. Portland to Boston Corridor.

29192034 TLBAsc

PRIVATIZATION--MASSACHUSETTS.

Oversize
dE
356
.M4
M37
1992

Massachusetts. Highway Department.
Privatization initiatives : briefing book / Massachusetts Highway Department. -- [Boston, Mass. : The Dept., 1992]
1 v. (various pagings) ; 30 cm.

1. Massachusetts. Highway Department. 2. Roads--Massachusetts--Maintenance and repair--Costs. 3. Privatization--Massachusetts.

26660307 TLBAsc

PRIVATIZATION--MASSACHUSETTS.

HE
356
.M4
P74
1993

Privatization of Essex County highway maintenance : private profits at taxpayers' expense? / Subcommittee on Privatization. -- Boston, Mass. : Commonwealth of Massachusetts, House Committee on Post Audit and Oversight, House Post Audit and Oversight Bureau, 1993.
23, [18] leaves ; 28 cm.

1. Privatization--Massachusetts. 2. Roads--Massachusetts--Essex County--Maintenance and repair--Costs. 3. Massachusetts. Highway Dept.

28296920 TLBAsc

RAILROADS AND STATE.

HE
1051
.L68
B32
1994

Lowe, Marcia D.
Back on track : the global rail revival / Marcia D. Lowe ; Carole Douglie, editor. -- [Washington, DC] : Worldwatch Inetitute, c1994.
54 p. ; 22 cm. -- (Worldwatch paper ; 118)
ISBN 1-878071-19-X (pbk.)

1. Railroads and state. 2. Railroads.

30308533 TLBAec 94-60381

RAILROADS AND STATE--VIRGINIA.

HE
2771
.V8
V574
1990

Virginia. Rail & Public Traneportation Divieion.
Preservation of eeeential rail eervice / prepared by Rail and Public Transportation Divieion, Virginia Department of Traneportation. -- [Richmond] : Commonwealth of Virginia, 1990.
1 v. (varioue pagings) : ill. ; 28 cm.

1. Railroade and etate--Virginia. 2. Railroade--Virginia. 3. Railroade--Virginia--Abandonment.

23053030 TLBAec 90-624377

ROAD CONSTRUCTION--SAFETY MEASURES.

A-V
TE
228
.T74
1979

Traffic control for conetruction and maintenance activitiee [videorecording]. -- Washington, D.C. : Institute of Transportation Engineere c 1979.
3 videocaeettes : ed., col. ; 1/2 in. -- (ITE 1000 series)

1. Traffic engineering. 2. Road conetruction--Safety measures. 3. Road conetruction workeres--Training of. 4. Traffic eigne and eignals.

30526554 TLBAec

ROAD MACHINERY--CONGRESSES.

HE
131
.T687c
no.418

Equipment Management Workehop (9th : 1992 : Reeearch Triangle Park, N.C.)
Preeentatione from the 9th Equipment Management Workehop. -- Waehington, D.C. : Transportation Reeearch Board, National Research Council, [1993]
83, A-2, B-4 p. : ill. ; 28 cm. -- (Traneportation reeearch circular, ISSN 0097-8515 ; no. 418)

1. Road machinery--Congreseeee. 2. Highway departments--Equipment and eupplieo--Congreseeee.

30039770 TLBAsc

ROADS--CALIFORNIA--GUARD FENCES--TESTING.

TE
228.2
.J48
V43
1993

Jewell, John.
Vehicle craeh teete of steel bridge barrier rail eyetems for uee on secondary highwaye : report / prepared by John Jewell. -- [Sacramento] : California Dept. of Traneportation, Division of New Technology, Materiale and Reeearch ; Springfield, VA : Available through the National Technical Information Service, 1993]
vi, 128, [6] p. : ill. (eome folded) ; 28 cm.
STRN: FHWA/CA/TL-93/01
1. Roads--California--Guard fencee--Teeting. 2. Bridge railings--California--Teeting. 3. Bridge railinge--Ree earch. 4. Roade--California--A cceeeories--Testing.

29253615 TLBAec

ROADS--ECONOMIC ASPECTS--UNITED STATES.

HE
336
.E3
A87
1992

Aeseeeing the relationship between traneportation infraetructure and productivity : eummary of current reeearch : part of a highwaye and economic productivity agenda. -- Washington, D.C. : Federal Highway Administration, [1992]
vii, 25 p. ; 28 cm. -- (Searching for solutione. A policy discueeion eeries ; no. 4)

1. Roade--Economic aspecte--United Statee. 2. Induetrial productivity--United Statee.

27563231 TLBAsc

ROADS--ENVIRONMENTAL ASPECTS.

HE
131
.T687r
no.1424

Environmental issuee related to materials and etabilization. -- Waehington, D.C. : National Academy Preee, 1993.
v, 49 p. : ill. ; 28 cm. -- (Transportation reeearch record ; 1424)
ISBN 0-309-05571-7

1. Roads--Environmental aspects. 2. Transportation engineering--Environmental aepects. 3. Pavements--Environmental aspecte.

30374079 TLBAec

ROADSIDE IMPROVEMENT--ARIZONA--COMPUTER PROGRAMS.

TE
177
.P47
U83
1994

Perry, Cliff.
User's manual documentation / prepared by Cliff Perry, Melody Bruner, Suhae Prakrashumar. -- Phoenix, Ariz. : Arizona Dept. of Traneportation ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
123 p. : ill. ; 28 cm.
STRN: FHWA-AZ-94-318

1. Roadside improvement--Arizona--Computer programe. 2. Highway engineering--Arizona--Computer programs. 3. PIMa (Computer file)

30494165 TLBAsc

ROUTE 139 (MASS.)

HE
356.5
.B73
I571
1993

Route 139 intersection improvements, Pembroke-Marshfield, Massachusetts : supplemental draft environmental impact report / Federal Highway Administration and Massachusetts Highway Department. -- Boston, Mass. : [Massachusetts Highway Dept.], 1993.
1 v. (various pagings) : ill., maps, plans ; 28 cm.

1. Route 139 (Mass.) 2. Roads--Massachusetts--Pembroke--Interchanges and intersections. 3. Roads--Massachusetts--Marshfield--Interchanges and intersections.

30384985 TLBAsc

ROUTE 146 (MASS.)

HE
356
.M4146
R456
1992

Route 146/Massachusetts Turnpike interchange project : for Worcester & Millbury, Worcester County, Massachusetts / United States Dept. of Transportation, Federal Highway Administration and Massachusetts Highway Dept. ; Massachusetts Turnpike Authority. -- Cambridge, Mass. : Federal Highway Administration, 1992.
2 v. : ill., maps, plans : 28 cm.

1. Route 146 (Mass.) 2. Massachusetts Turnpike (Mass.) 3. Roads--Interchanges and intersections.

TLBAsc

ROUTE 146 (MASS.)

HE
356
.M4146
R457
1992

Route 146/Massachusetts Turnpike interchange project : supportive engineering document, Worcester & Millbury, Worcester County, Massachusetts / United States Dept. of Transportation, Federal Highway Administration and Massachusetts Highway Dept. ; Massachusetts Turnpike Authority. -- [Cambridge, Mass.] : Federal Highway Administration, 1992.
1 v. (various pagings) : ill., maps, plans : 28 x 43 cm.
1. Route 146 (Mass.) 2. Massachusetts Turnpike (Mass.) 3. Roads--Interchanges and intersections.

TLBAsc

SHIP RESISTANCE.

VM
751
.K66
A32
1993

Klosinski, Walter E.
Additional resistance and seakeeping model tests of a U.S. Coast Guard 120 ft notional WPB design / Walter E. Klosinski and P. Ward Brown (Davidson Laboratory, Stevens Institute of Technology, Castle Point Station). -- Groton, Conn. U.S. Coast Guard Research and Development Center ; Springfield, Va. : Available through the National Technical Information Service, [1993]
x, 172 p. : ill. ; 28 cm.
SIRN: CG-D-17-93
1. Ship resistance. 2. Ships--Seakeeping. 3. Ships--Hydrodynamics. 4. Government vessels--United States--Evaluation.

29661871 TLBAsc

SHIPS--FIRES AND FIRE PREVENTION.

YK
1258
.B69
I53
1993

Boyer, LeMoyne.
Thermal radiation from marine fire boundaries : evaluation and analysis of A-60, A-30, A-15, and A-0 bulkhead assemblies / LeMoyne Boyer. -- Groton, Conn. : U.S. Coast Guard Research & Development Center ; Springfield, Va. : Available through the National Technical Information Service, [1993]
130 p. in various pagings : ill. ; 28 cm.
SIRN: CG-D-01-94

1. Ships--Fires and fire prevention. 2. Bulkheads (Naval architecture)--Fires and fire prevention.

30061432 TLBAsc

SYNTHETIC FUELS.

IP
360
.M87
P76
1992

Murphy, M. J. (Michael John), 1948-
Properties of alternative fuels / prepared by Michael J. Murphy (Battelle) ; to Office of Technical Assistance & Safety, Federal Transit Administration. -- [Washington, D.C.] : Federal Transit Administration, [1992]
[22] leaves ; 28 cm.

1. Buses--Fuel systems. 2. Buses--Motors (Compressed-gas). 3. Internal combustion engines, Spark ignition--Alternate fuels. 4. Methanol as fuel. 5. Gasoline, Synthetic. 6. Motor fuels--Additives. 7. Synthetic fuels.

28284617 TLBAsc

TOLL ROADS--GOVERNMENT POLICY--UNITED STATES--CONGRESSES.

HE
336
.T64
E96
1992

Exploring key issues in public-private partnerships for highway development : summary of seminar proceedings / prepared by Walcoff & Associates ; sponsored by the Office of Policy Development, Federal Highway Administration. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Highway Administration, [1992]
1 v. (various pagings) ; 28 cm. -- (Searching for solutions. A policy discussion series ; no. 2)
1. Toll roads--Government policy--United States--Congresses. 2. Roads--United States--Finance--Congresses. 3. Highway planning--United States--Congresses.

27248247 TLBAsc

TRAFFIC ENGINEERING--ECONOMIC ASPECTS--CONGRESSES

HE
336
.E3
S45
1992

Seminar on the Application of Pricing Principles to Congestion Management (1991 July 23 : Washington, D.C.)
Exploring the role of pricing as a congestion management tool : summary of proceedings -- Seminar on the Application of Pricing Principles to Congestion Management / sponsored by the Federal Highway Administration and the Federal Transit Administration. -- [s.l.] : Federal Highway Administration, 1992
ix, 18 leaves ; 28 cm. -- (Searching for Solution. A policy discussions series ; no.1)
1. Traffic engineering--Economic aspects--Cong resses

26646024 TLBAsc

TRAFFIC FLOW.

HE
336
.T7
T65
1992

Tom, Gregory K. J.
Vehicle spacing for the design of metered on-ramps / by Gregory K.J. Tom, Howard K. Fong. -- [Sacramento, CA] : California Dept. of Transportation, Division of Traffic Operations, [1992]
ii, 15 leaves ; 28 cm.
STRN: FHWA/CA/TO/TOS-92-4

1. Traffic flow. 2. Roads--Interchanges and intersections. 3. Electronic traffic controls.

27217942 TLBAsc

TRAFFIC SAFETY.

HE
131
.T687c
no.416

Issues surrounding highway and roadside safety management. -- Washington, D.C. : Transportation Research Board, National Research Council, [1993]
103 p. : ill ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 416)

1. Traffic safety. 2. Roads--Safety measures. 3. Roads--Guard fences.

29611509 TLBAsc

TRAFFIC SAFETY--LAW AND LEGISLATION--ECONOMIC ASPECTS.

HE
5614
.K43
H43
1993

Keeler, Theodore E.
Highway safety, economic behavior, and driving environment / Theodore E. Keeler. -- Rev. 1993. -- Berkeley, Calif. : University of California Transportation Center, [1993]
26 p. ; 28 cm. -- (Working paper / University of California Transportation Center ; no. 65)

1. Traffic safety--Law and legislation--Economic aspects. 2. Traffic regulations--Economic aspects.

30434933 TLBAsc

TRANSPORTATION ENGINEERING--BIBLIOGRAPHY.

REF.
Z
5853
.T7
B37
1990

Basic references for transportation engineers / Institute of Transportation Engineers. -- Washington, D.C. (525 School St. S.W., Ste. 410, Washington, D.C. 20024-2729, USA) : The Institute, c1990.
ii, 9 p. ; 28 cm. -- (ITE publ. ; no. PP-019)

1. Transportation engineering--Bibliography.

25831403 TLBAsc

TRUCKS--UNITED STATES--ACCIDENTS--MATHEMATICAL MODELS.

HE
5614.2
.D48
1993

Development of relationship between truck accidents and geometric design, Phase I / [Shaw-Pin Miaou ... et al.]. -- McLean, Va. : Federal Highway Administration, Office of Research and Development ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
viii, 144 p. ; 28 cm.
STRN: FHWA-RD-91-124

1. Trucks--United States--Accidents--Mathematical models. 2. Roads--United States--Design and construction--Mathematical models.

28567983 TLBAsc

TRUCKS--UNITED STATES--SAFETY APPLIANCES.

TL
230
.E44
H42
1993

Elias, Jeffrey C.
Heavy truck rear underride protection / [Jeffrey C. Elias, Michael W. Monk]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; [Springfield, VA : Available through the National Technical Information Service, 1993]
vii, 125 p. : ill. ; 28 cm.
STRN: DOT HS 808 081

1. Trucks--United States--Safety appliances. 2. Truck accidents--United States.

30505832 TLBAsc

TRUCKS--UNITED STATES--SAFETY MEASURES--RESEARCH.

HE
131
.T687sy
no.182

Michie, Jarvis Dale.
Performance and operational experience of truck-mounted attenuators / Jarvis D. Michie, Maurice E. Bronstad. -- Washington, D.C. : National academy Press, 1992.
54 p. : ill. ; 28 cm. -- (Synthesis of highway practice, ISSN 0547-5570 ; 182)
ISBN 0-309-05308-0

1. Trucks--United States--Safety measures--Research. 2. Trucks--United States--Safety measures--Evaluation.

28090833 TLBAsc 92-61731

URBAN TRANSPORTATION--UNITED STATES--PLANNING--CONGRESSES.

HE
308
.E33
1992

Edge city and ISTEA : examining the transportation implications of suburban development patterns : summary of proceedings, Seminar on Edge City and ISTEA -- So What? / sponsored by the Office of Policy Development, Federal Highway Administration. -- Washington, D.C. : U.S. Federal Highway Administration, [1992]
xi, 21, A-3, B-1 p. ; 28 cm. -- (Searching for solutions. A policy discussion series ; no. 7)
STRN: FHWA-PL-93-010

27373856 TLBAsc SEE NEXT CRD

CIVIL ENGINEERING
OCTOBER 1994 VOLUME 64 NUMBER 10

FOCUS ON THE ENVIRONMENT

QUEST FOR THE PERFECT CAP Engineers believe they have developed a maintenance-free waste-site barrier that will last for 1,000 years. *By N. Richard Wing and Glendon W. Gee* 38

OFFSHORE RESCUE Innovative repair techniques helped engineers save wastewater outfalls off both U.S. coasts.
By Jonathan A. French, Paul Gustafson, John S. Murk and Kellene M. Burn-Lucht 42

COMPUTER-AIDED CLEANUP An advanced three-dimensional computer model has helped get the more–than–$1 billion cleanup of the Fernald, Ohio Superfund site back on track.
By Jim Williams and Barney Jones 46

CONSTRUCTING AROUND CONTAMINATION Three case histories demonstrate some problems and solutions when dealing with contamination on a construction site.
By Edward A. Wood, Jill R. Crosbie and Richard A. Brown 50

ENVIRONMENTAL CAMPUS FOR EPA Green design, fiscal responsibility and a new U.S. Army Corps of Engineers value engineering program come together in EPA's planned $240 million research campus. *By Tod Rittenhouse* 54

SOIL-COVER SUCCESS Information from instrumentation proved that a mandated clay cap would fail while a soil cover would get the job done for $20 million less.
By Issa S. Oweis, George Dakes, Thomas Marturano and Richard Wierer 58

BUILDING A BARRIER WALL THROUGH BOULDERS A cutoff wall for a contaminated site had to go through land reclaimed with rocky fill. The contractor devised a way to construct the wall through the boulders. *By Donald R. McMahon, Michael J. Mann and Robert C. Tulett* 60

ISTEA ENHANCES TRANSPORTATION New bikeways, roadside landscaping and even some infrastructure rehabilitation projects are eligible for funding as transportation enhancement activities. *By Douglas L. Tober* 64

ESCAPING THE NICHE Technical seminars for current clients can help your business grow.
By Shawn R.T. Severn and Corinne G. Severn 67

ENGINEERING NEWS

The crane also rises ... cracks discovered in the Vietnam Veterans Memorial ... steel-frame seismic solution? ... recycled geotextiles stir debate ... pump-and-go dredging ... a new class of smart highways 10

CIVIL ENGINEERING
SEPTEMBER 1994 VOLUME 64 NUMBER 9

FOCUS ON REHABILITATION

THE ART OF THE INFRASTRUCTURE Public officials are inviting artists to sit next to engineers at the public-works table. *By Teresa Austin*

STEAM PLANT BECOMES BIOTECH LAB The landmark Lake Union Steam Plant in Seattle is the new home of a biotechnology laboratory following a $25 million renovation.
By Terry Lundeen, Todd Perbix and John Schwartz

THE ENGINEER AS PRESERVATIONIST The structural engineer specializing in historic-preservation projects must be part historian and part detective. *By Marie Ennis*

CHICAGO AUTOMATES EXPRESSWAY LANES The $450 million, five-year effort to reconstruct a 7.5 mi portion of Chicago's John F. Kennedy Expressway will be substantially complete this fall. *By Rita Robison*

AMERICA'S PAVEMENTS: WORLD'S LONGEST BATHTUBS The Romans understood the way water damages roads—and how to protect against it. Can U.S. engineers relearn this lesson?
By Harry R. Cedergren

RCC FOR SEISMIC DESIGN Roller-compacted concrete is saving $10 million on a seismic retrofit of California's historic Little Rock Dam.
By Noel C. Wong, Michael P. Forrest and Sze-Hang Lo

GPS GOES REAL TIME Using real-time kinematic Global Positioning System technology to conduct cadastral surveys can mean major time and cost savings.
By Carl W. Sumpter and Gregory W. Asher

MANAGING TRAFFIC WITH REAL-TIME TRANSPONDERS Besides collecting tolls, automatic-vehicle-identification equipment can provide information for congestion management and traffic planning studies. *By Richard W. Doering*

PRECEPTS OF PROJECT MANAGEMENT The author offers project managers a dozen pointers steeped in old-fashioned common sense. *By David J. Kerkes*

IN REHAB WE TRUST A quick fix in time for the religious holidays followed by an aesthetically pleasing redesign helped engineers restore a synagogue. *By Benjamin Lavon*

ENGINEERING NEWS

Innovative microtunneling sets record ... top 100 fires ... base isolators for Los Angeles City Hall ... arsenic regulations could cost billions ... truck tires recycled as pipes

DISPUTE RESOLUTION JOURNAL SEPTEMBER 1994 VOL. 49, NO. 3

COVER STORY

IS ADR THE Rx FOR HEALTHCARE DISPUTES?
One element of the national healthcare debate is consideration of alternative methods of resolving patient/provider disputes. See articles, pages 7 to 21.

FEATURES

7 IS ADR THE Rx FOR MALPRACTICE?
By Armand Leone Jr.

14 ADR RELIEVES THE PAIN OF HEALTHCARE DISPUTES
By James W. Reeves.

22 ARBITRATION FINALITY AND THE PUBLIC POLICY EXCEPTION
By Bernard F. Ashe.

29 BRINGING THE PARTIES APART—DIVORCE MEDIATION'S DEBT TO LABOR MEDIATION
By Joel M. Douglas and Lynn J. Maier.

38 ARBITRATION IN ANCIENT GREECE
By Henry T. King Jr. and Marc A. LeForestier.

48 REPRESENTING CLIENTS IN ARBITRATION PROCEEDINGS—GUIDELINES FOR LAWYERS
By Helen B. Culiner.

53 SURVIVAL KIT FOR COMPLEX CONSTRUCTION ARBITRATION
By James J. Myers.

58 SELECTING THE RIGHT MEDIATOR
By Arthur A. Chaykin.

66 THE ROLE OF PARTY-APPOINTED ARBITRATORS
By John P. McMahon.

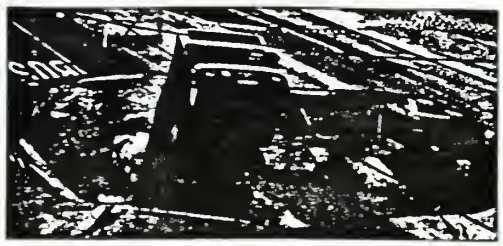
69 PSSST, PLEASE KEEP IT CONFIDENTIAL —ARBITRATION MAKES IT POSSIBLE
By Philip Rothman.

73 READIN', WRITIN', AND ADR
By Cindy Fazzi.

76 NAFTA—RESOLVING INT'L PAYMENTS CONFLICTS
By Robert H. Davis.

NEWS

TUNNEL COLLAPSE IN MUNICH KILLS FOUR



A bus plunged into a water-filled hole in Munich. The hole was created when a New Austrian Tunneling Method project for a Munich subway collapsed at the face. Contractors are stabilizing the hole with a ring of piles. **Page 9**

BUSINESS
8 The Austin Co. seeks end to red ink
12 A few gains, many cuts in fiscal 1995 appropriations
15 AGC firms fairly frustrated

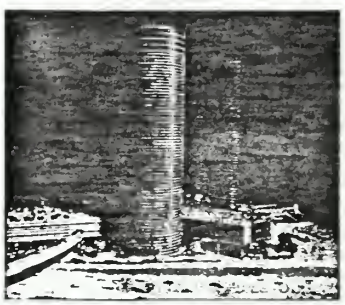
WATER AND POWER
18 Drain suit draws to a close
19 Filipino gas discovery fuels electric projects
19 U.K. encloses plants for 130 years

TRANSPORTATION
10 TBM loses its grip, halts work on job
16 Cable staved concept questioned
18 Auditor reproves estimates

BUILDINGS
16 Team backs troops in Haiti
17 Disney surrenders in war over site
17 Gilroy holds its breath waiting for permits
20 Arts center in Canada poses design challenge

ENVIRONMENT
10 Ten states to reduce powerplant emissions
13 Milwaukee plans drinking water fixes
14 Waste treatment plant shows promise
14 Puerto Rico hit on wastewater
20 Subsurface radar speeds railroad repairs in Boston

NEWS



TRIAL IN TEL AVIV

A development team wants the Israeli city to take Shalom Center away from David J. Azrieli, saying he is changing the design after firing architect Eli Attia. **Page 10**

POWER
17 Oregon high court ends challenge to big powerplant
17 Plant will make coal burn more efficiently
20 Canadian winds have potential
24 Acquisition puts PB in world power play

COMPANIES AND ASSOCIATION
11 Corps is redesigning itself
16 Alternative dispute resolution gainir ground
21 Tomahawk bankrupt weeks after merger
23 Engineers advise Atlanta on infrastructure
23 Carpenters' unions settle drywall la suit

BUILDINGS
16 'Bugged' embassy revived in Mosco
21 San Francisco scores in state consoli dation

TRANSPORTATION
12 Denver's new airport under investig tion
14 Federal pressure shakes L.A. subway
15 Tunnelers finally score on Denmark Great Belt
15 Cheaper maglev test nears
20 California looks at Santa Cruz rail
22 Boston looks at costly railroad tunne

ENVIRONMENT
12 WEF mulls new clean water push
14 CEOs seek ways to stay green
14 Jacobs Engineering to bid Rocky Fla

A SUPPLEMENT TO ENR

Intelligent Highway SYSTEMS

SEPTEMBER 26, 1994

Linking the engineering, construction and high-technology industries to build America's infrastructure of the future.

SPECIAL REPORT

8 MANAGING FOR SUCCESS
BY BRIAN J. STEARMAN
If IVHS with its "smart cars" and "smart highways" is to succeed, those demonstrating the applicable technologies must practice "smart project management."

11 MINNESOTA GUIDESTAR'S LEGACY: PLANS TO DELIVER
BY JAMES L. WRIGHT
The challenge is project management—how best to manage the diverse groups involved



with system evolution and keep everyone working in the same direction.

FEATURES

24 HOUSTON'S SMART TRAFFIC MONITORING
BY FRANK DORRANCE
As highway congestion has become part of the daily grind and the daily headache for the average commuter, the need to improve traffic flow has become imperative.

26 LEARNING ABOUT THE SMART TRAVELER
BY STEPHEN P. CROSBY
SmarTraveler, a U.S. DOT Operational Field Test (FOT) site, reports positive results and perceptions with users.

28 ROADSIDE FORECASTING FOR IVHS
BY PHYLLIS A. MORRIS
One of the nation's best kept secrets is embedded in 43 states in the form of 2,652 in-pavement sensors.

TECHNOLOGY

4 AVL/GPS: Find It Now
BY JACQUELINE JONES
Automatic Vehicle Location (AVL) is becoming a winning combination for everyone



from fleet owners to armored transport operators.

INDUSTRY OPINION

32 Reducing Public Sector Risk
BY CHARLES TAYLOR

NEWS

2 Senate Approves FY'95 Funding
Round Two of Architecture Forums
Scientific-Atlanta to Lead IVHS Team
MFS Network Technologies Selected for Autobahn

3 IVHS America to Change Name?

DEPARTMENTS

3 Publisher's Column
23 Fax Page
34 Products
35 Terms at a Glance
36 Calendar

Cover illustration showing the myriad components necessary for successful project management by Norm Bendell

GIS WORLD
VOL. 7 NO. 9 The World's Leading Geographic Information Systems Publication SEPTEMBER 1994

30 GIS Benefits Myriad Government Missions

31 The *GIS WORLD* Interview:
Interior Secretary Bruce Babbitt

34 Federal GIS Procurements Large, Complex
By Laura Lang

38 Federal GIS Standards:
Think Globally, Act Locally
By Eric J. Strand

40 OGIS Paves the Way to GIS Interoperability
By Kurt Buehler

42 Commercial Earth Observation Information Systems Will Benefit Users
By Louis G. Hecht Jr.

46 Integrate GIS and CAD to Visualize Landscape Change
By Kevin Mayall, G. Brent Hall and Thomas Seebohm

50 Fuzzy Logic Can Help GIS Cope with Reality
By Daniel Z. Sui

GIS WORLD
VOL. 7 NO. 10 The World's Leading Geographic Information Systems Publication OCTOBER 19



22 Who's Getting Smoked by Project 615?
By Sandra Wendelken

34 GPS for GIS — A Comparative Survey
By Frank van Diggelen

42 Sound Software Engineering Underlies GIS Development
By Dan Williams and Greg Bury

46 Using GIS for Visual Simulation Modeling
By Michael Batty

52 Plan a Windows Desktop Mapping Strategy
By Jeffrey A. Steinberg

60 OGIS Augments Data Transfer
By Kurt Buehler

ITE
JOURNAL

Volume 65, Number 10
October 1994

Articles

12 International President's Message

18 **Modern Roundabouts for Maryland**
By Edward J. Myers
An examination of the research and analysis that led to the construction of Maryland's first modern roundabout.

24 **Facing Up to a Street Closure Epidemic**
By R. Marshall Elizer Jr. and Nazir Lalani
As urban traffic becomes more congested, local agencies throughout the United States are facing street closure requests by their residents. The City of Buenaventura, Calif., offers a comprehensive policy for evaluating those requests.

30 **Buildings Don't Clog Our Roads, People Do!**
By Scott L. Shaw
The author challenges the concept that residential development is less intensive than commercial development.

37 **Traffic Management in Avalanche Zones on the Trans-Canada Highway**
By John Morrall and David Skjonsberg
The Snow Research and Avalanche Warning Section (SRAWS) of the Canadian Parks Service develops a traffic management plan to accommodate a four-fold increase in winter traffic volumes on the Trans-Canada Highway.

ITE
JOURNAL

Volume 64, Number 9
September 1994

Articles

11 International President's Message

14 **Membership Warehouse Club Trip Generation Study**
By Linda Olson Pehlke
The study was to sample an adequate number of membership warehou club sites in Massachusetts to determine average trip making character tics based on independent variables.

21 **Seasonal Traffic Counts for a Precise Estimation of AADT**
By Satish C. Sharma and Yongmei Leng
Average annual daily traffic is examined on Minnesota highways.

30 **Risk Factors for Bicycle-Motor Vehicle Collisions at Intersections**
By Alan Wachtel and Diana Lewiston
The authors identify factors correlated with increased risk of bicycle/motor vehicle collisions, and suggest practices that reduce risk.

36 **An Informational Report: Meeting Continuing Education Needs Through Short Courses**
By ITE Technical Council Committee 2-43
As a result of the committee's efforts, curricula for "basic" and "advanced" short courses were developed.

40 **Traffic Circles—A Viable Form of Intersection Control?**
By William F. Savage and Khaled Al-Sahili
Comparison of intersection design and operation to determine the mos efficient intersection and circle control.

47 **Traffic Impact Study and Proportionate Share Impact Fees**
By Timothy T. Jackson
This article explains the relationship between a traffic impact study and proportionate share impact fees.

Jane's Airport REVIEW

Incorporating *Aviation Ground Equipment Market*

ISSN 0954 76 49 SEPTEMBER 1994

NEWS

AIRPORTS
Pushback accidents are increasing, says report; Passenger traffic figures; In brief 2
Tenerife Sur to benefit from $3 billion budget; Bangladesh undertakes expansion 3

INDUSTRY
Letters; industry share prices; diary dates 4
Industry contracts 6

ATC
Met data to go live by GPS; In brief; ATC a focus of Russia conversion 9
ATC contracts 10

NEW PRODUCT REVIEW
Air traffic management; ATC communications; Airfield lighting; Passenger handling;ATC Meteorology 13

AIRPORTS

USA
John Wayne accounts for its growing success 17

FLIGHT INFORMATION DISPLAY SYSTEMS
Munich assesses its information network 23

PUBLIC RELATIONS
Good neighbours... 28

CHINA
China embarks on major airport equipment upgrade 31

EASTERN EUROPE
Traffic growth prompts airport expansion plans 37

ENVIRONMENT
Airline audits can save waste and money, too 42

PEOPLE MOVERS
On track for all-weather, 24-hour operations 45

ATC

FARNBOROUGH '94
Innovations on display 50

COMMUNICATIONS
Europe moves to clear channels 53

VOICE COMMUNICATIONS
Benefits of digital switches 58

WAKE VORTICES
Vortex research builds 60

BUYER'S GUIDE

A Buyer's Guide to Emergency Services 63

INTERVIEW

DIRECTOR GENERAL, AIRPORTS COUNCIL INTERNATIONAL (ACI)
Oris Dunham 64

Journal of

Transportation Engineering

Volume 120 Number 5 September/October 19

Technical Papers

Road-Maintenance Planning Using Genetic Algorithms. I: Formulation.
W. T. Chan, T. F. Fwa, and C. Y. Tan .....

Road-Maintenance Planning Using Genetic Algorithms. II: Analysis.
T. F. Fwa, C. Y. Tan, and W. T. Chan .....

Analysis of Accident Reduction Potentials of Pavement Markings.
Hashem R. Al-Masaeid and Kumares C. Sinha .....

Effect of Restriction of Vision on Driving Performance.
Rod Troutbeck and Joanne M. Wood .....

Application of Fuzzy Logic and Neural Networks to Automatically Detect Freeway Traffic Incidents.
Chien-Hua Hsiao, Ching-Teng Lin, and Michael Cassidy .....

Optimum Curvature for Simple Horizontal Curves.
Prianka N. Seneviratne and M. Nazrul Islam .....

Validation of Knowledge-Based System with Multiple Bridge Rail Experts.
Paul N. Roschke .....

Technologies for Planning Railroad Track Maintenance and Renewal.
Donald Uzarski and Sue McNeil .....

Dynamic Pavement-Strain Histories from Moving Traffic Load.
Zia Zafir, Raj Siddharthan, and Peter E. Sebaaly .....

Investigation of Conflict Characteristics at Airway Intersections.
Joseph N. Prashker, Irit Hocherman, and Shlomo Bekhor .....

Journal of
Structural Engineering
Volume 120 Number 10 October 1994

Technical Papers

Inelastic and Stability Analysis of Flexibly Connected Steel Frames by Springs-in-Series Model.
C. Y. Yau and S. L. Chan 2803

Structural Response to 3D Simulated Earthquake Motions in San Bernardino Valley.
Erdal Şafak and Arthur Frankel 2820

Material Nonlinear Analysis of Thin-Walled Beams.
A. Prokić 2840

Ultimate Resistance of Unstiffened Multiplanar Tubular TT and KK-Joints.
Joop C. Paul, Yuji Makino, and Yoshiaki Kurobane 2853

Experimental and Numerical Studies of Composite Beams Exposed to Fire.
Dietmar Hosser, Thomas Dorn, and Osama El-Nesr 2871

Assessment of Risk of Thermal Cracking in Hardening Concrete.
Mats Emborg and Stig Bernander 2893

Advanced Nonlinear Formulation for Reinforced Concrete Beam-Columns.
B. A. Izzuddin, C. G. Karayannis, and A. S. Elnashai 2913

Application of Adaptive Analysis to Reinforced Concrete Frames.
C. G. Karayannis, B. A. Izzuddin, and A. S. Elnashai 2935

Behavior of Graphite/Epoxy Concrete Composite Beams.
M. Saiidi, F. Gordaninejad, and N. Wehbe 2958

Slenderness Factor for Leaning Columns.
J. Dario Aristizabal-Ochoa 2977

Prediction of Observed Bridge Response with Soil-Pile–Structure Interaction.
N. Makris, D. Badoni, E. Delis, and G. Gazetas 2992

Stable Reinforced-Concrete Section-Analysis Procedure.
C. R. Thewalt and B. Stojadinović 3012

Uplift Modeling for Fracture Mechanics Analysis of Concrete Dams.
Raymond R. Dewey, Ronald W. Reich, and Victor E. Saouma 3025

Technical Notes

Elastic Constants for Z-Core Sandwich Panels.
Tat-Ching Fung, Kang-Hai Tan, and Tat-Seng Lok 3046

Different Approaches to Rating Slab Bridges.
Vikas Huria, Kuo-Liang Lee, and Ahmet E. Aktan 3056

Automatic Truss Design by Optimized Growth.
William Keith Rule 3063

Discussions

Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load. Vincent Caccese, Mohamed Elgaaly, and Ruobo Chen.
By Geoffrey L. Kulak, D. J. Laurie Kennedy, and Robert Driver. Closure by authors 3072

Strength of New Heat Treated Window Glass Lites and Laminated Glass Units. H. Scott Norville, Paul M. Bove, Darrel L. Sheridan, and Stacey L. Lawrence.
By W. Lynn Beason 3075

Nonlinear Finite Element Analysis of RC Slab Bridge. Vikas Huria, Kuo-Liang Lee, and A. Emin Aktan.
By Mostafiz R. Chowdhury. By John P. Newhook and Aftab A. Mufti. Closure by authors 3077

METRO

Serving bus and rail transit & motorcoach operations since 1904

SEPTEMBER / OCTOBER 1994

Vol 90 No 5

Features

ADAptation Will Remain in Your Future 34
Transit and its passengers continue to change the face of accessibility. Private operators still wait for the final rules.

Special Section

***METRO's* 90th Anniversary Section**

90 years of service	A4
19th century transit	A6
Future trends	A10
Industry comments	A18
From our pages, 1905-94	A22
Bye bye, Buy America?	A40
Name that bus	A54

Top 100 Transit Bus Fleets 99
METRO's annual exclusive list of North America's largest fleets.

COVER STORY
Cleveland Makes a Comeback 115
A declining inner city and poor downtown rail access have been a struggle for transit. Now both are rebounding thanks to new offices, sports facilities and bus and rail investments.

Need Some Buck$ for Your Transit Project? 128
Experts show you how to get a piece of $12.2 billion yearly in flex funds.

EXECUTIVE DIALOG
Flxible's Kravitz Says Shakeout Is Not Over 134
He says bus market will fragment further.

Tucson, San Antonio, Louisville Lead 138
Nation's major bus transit systems are ranked for cost-effectiveness.

EXECUTIVE DIALOG
Intermodal Also Means Moving Freight, Information, Washington 140
Anne Aylward and Jacki Bacharach of the National Commission on Intermodal Transportation talk about their work on the eve of the panel's report to Congress.

September 1994
Vol. 33, No. 8

PARKING

THE MAGAZINE OF THE PARKING INDUSTRY

FEATURES

29 How Far Should Parkers Have to Walk
Mary S. Smith and Thomas A. Butcher
Two experts reveal a formula for measuring possible walking distances.

BOTTOM LINE MANAGEMENT



34 Protecting Your Revenues *Larry Donoghue*
A parking consultant's views on critical factors in controlling revenue.

40 Walking the Tight Rope *Harry J. Renaud*
An Imperial Parking executive gives advice on working customer service into the bottom line.

43 Bottom Line Management and the Human Factor
Lynnette Huler
A human resources specialist addresses the need to link training to your business plan.

46 Welcome to Orlando!

47 A New Health Plan for NPA Members *Richard Zoretic*
Patterson/Smith has developed a new plan that NPA members can offer its employees.

49 Showcase of Products and Services
A guide to help you through this year's NPA trade show.

63 INDUSTRY PROFILE: Tom Kanngiesser *Lou Cook*
The man behind NPA's own bottom line.

Railway Age

September 1994

36 The Competitors: Burlington Northern
36 Zigzagging—or just evolving?
40 Gerald Grinstein: "Our rhetoric was terrific, but the performance wasn't there."
46 M/W: For big maintenance-of-way jobs, improved equipment.
48 Mechanical: A power play pays off; now, a new generation of cars.
50 R&D: From a.c. to electronic brakes, BN leads the way

55 The high-tech explosion
With unaccustomed speed, railroads are embracing new technology.

67 From turmoil, DART takes shape
Construction of Dallas' light rail system is finally making serious headway.

79 Will Canada sacrifice VIA?
Railroads "don't get my heart going pitty-pat," says Canada's transport minister.

91 Long Island Rail Road: 160, and still learning
New York's venerable passenger carrier gears up for future growth.

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 32/NO. 9 SEPTEMBER 1994

FEATURES

32 Cement stabilized permeable bases drain water, add lift to pavements
Wisconsin projects show cement stabilized open-graded bases provide increased drainage, longer life for PCC pavements; treated base lends 'truckability'

34 High cost could put brakes on national IVHS implementation
House subcommittee hearings explore plans and cost of Intelligent Vehicle/Highway System; four high-tech consortia vie to be vendor of national 'architecture'

40 Keep pavers on move to meet PCC ride specs, pros say
Steady pace of paver, consistent concrete supply cited by contractors, engineers as biggest factors in obtaining best PCC rideability results

42 Pavement management a top topic for December 1994 'Road Show'
Eighth Road & Bridge Conference & Expo will be held in suburban Chicago this December; big draw to government agencies, consulting engineers and contractors

44 Houston bridge piles drilled using high-pressure water/cement slurry
Result is quick drilling and placement of spread footings and steel in deep piles; contractor change order by Brown & Root starts acceptance process

48 Geogrid boosts bearing capacity of soft subgrade
Tensar polypropylene geogrid employed on Maryland I–270 saves highway department $1.5 million; product interlocks with fill material to inhibit lateral movement

52 Beaver State to welcome roadside vegetation pros
1994 National Roadside Vegetation Management Association to hold annual conference and exhibition in Portland, Ore.; latest vegetation control equipment displayed

60 Counties turn to contractors to perform roadside spraying
More road departments are using private herbicide application contractors to control both vegetation and government costs; equipment, training investments reduced

62 INTERMAT '94 draws thousands of contractors to Paris
Largest heavy construction equipment show of 1994 alternates with Germany's Bauma and United States' CONEXPO; here's more about the exhibitors

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure

VOL. 32/NO.10 OCTOBER 1994

Special Report:
ASPHALT RECYCLING & RECLAIMING '94

32 City promotes market for RAP to cut milling, resurfacing costs
Rochester, N.Y., gives contractors ownership of RAP and option to use material in resurfacing to reduce costs, conserve landfills

34 Mississippi DOT allows use of RAP in surface courses
Magnolia State allows reclaimed asphalt pavement up to 15% in surface courses; See asphalt recycling specs for all 50 states

40 Cold in-place recycling rejuvenates county road
Allegheny County, Pa., utilizes cold-in-place recycling to improve road condition; re-use of existing pavement reduces trucking costs

44 Down-cut drum configuration works for New York state contractors
Down-cut, or reverse, drum configuration produces consistent asphalt cuttings of around minus 2-in., compared to conventional methods

46 Over 70% of Nevada DOT asphalt jobs are polymer modified
Nevada DOT has been working with polymer modified asphalts for more than seven years on a large scale, and has refined its mix designs

52 Cold-milled curb cuts save time, money on cobblestone streets
Contractor Pallette Stone cold-mills portions of older Watervliet, N.Y. streets, permitting city to postpone full-scale work

TUNNELS & TUNNELLING

Comment 5

World News 7, 8, 9, 11, 13, 14

Land of tunnelling opportunity 17
ISRAEL *Peter Darling, The Editor, looks at one of the country's rare tunnelling projects. He also managed to interview four of the country's foremost engineers involved in construction on highway development and the prospects for tunnelling*

A sea change on coastal pollution 27
BRITISH TUNNELLING SOCIETY *The Coastal Waters Interceptor Project at Southport was the subject of a paper given at the Institution of Civil Engineers in London in May. Blair Marriott of North West Water and Tony Tagg of Costain were the presenters*

Can the newcomer stand up? 30
NATM *Following on from his celebrated article 'To NATM or not to NATM', first published in 1985, Sir Alan Muir Wood discusses the main features of this support method and maintains that engineers should judge for themselves whether it delivers all the solutions that it has been credited with.*

Martin Herrenknecht: the TBM builder 34
Interview *During April's ITA meeting in Cairo, Peter Darling, The Editor, interviewed this energetic engineer and managed to fill in some of the background to his company, its roots, its development and its aspirations.*

River crossing in the Basque country 37
SPAIN *On a recent visit to Bilbao, Peter Darling, The Editor, observed how both immersed tubes and jet grouting were used to tunnel below the city's river*

Contracts & Orders 42

Reducing the risk factor 43
GROUND CONSOLIDATION *Unexpected ground conditions can be both dangerous and costly to tunnellers. However, prudent designers can take precautions if site investigation has put them on their guard. Charles Grenwell, Technical Journalist, looks at some of the tried and tested methods currently available*

Business & Finance 47

Dates & Events 50

State Transportation Library Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

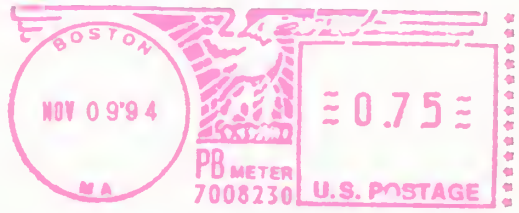
Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION LIBRARY
10 PARK PLAZA
BOSTON, MA 02116



Leonard Adams-Gov. Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

MASS.STL1.3:1994/6

STATE TRANSPORTATION LIBRARY

SELECTED ACQUISITIONS

William F. Weld
Governor

Argeo Paul Cellucci
Lieutenant Governor

James J. Kerasiotes
Secretary of Transportation

GOVERNMENT DOCUMENTS
COLLECTION

JAN 17 1995

University of Massachusetts
Depository Copy

November • December • 1994

10 PARK PLAZA
BOSTON, MASSACHUSETTS 02116 (617) 973-8000

Lynn Matis
Chief Librarian & Archivist

Natalie Ridge
Technical Services Librarian

George Sanborn
Reference Librarian

Irene Guthrie
Secretary

LIBRARY BULLETIN BOARD

Our library has acquired the National Technical Information Service (NTIS) database on C-D Rom on a subscription basis. Produced by the U.S. Department of Commerce, NTIS is the central source for the dissemination of government sponsored research. This database consists of summaries of research, development, engineering reports along with journal articles, conference papers, and bibliographies. Subject areas include administration and management, aeronautics and aerodynamics, civil engineering, computers and information theory, environmental pollution, transportation, and urban and regional technology.

Any user of the library is welcome to learn how to search NTIS on C-D Rom, We offer written instruction, a tutorial, and one-on-one instruction. If you would like to learn this system, you may stop by the library or schedule an appointment with a staff member.

AERONAUTICS, COMMERCIAL--CONGRESSES.

1
687c
.425

International Workshop on Future Aviation Activities (8th : 1993 : Washington, D.C.)
Future aviation activities : eighth international workshop : National Academy of Sciences, September 13-15, 1993, Washington, D.C. -- Washington, D.C. : Transportation Research Board, National Research Council, [1994]
99 p. : charts ; 28 cm. --
(Transportation research circular ; no. 425)

1. Aeronautics, Commercial--Congresses. 2. Aeronautics, Comsercial--Government policy--Congresses.

26 OCT 94 30719287 TLBAsc

AGED AUTOMOBILE DRIVERS.

1
687c
.419

Driver performance data book update : older drivers and IVHS. --
Washington, D.C. : Transportation Research Board, National Research Council, [1994]
114 p. : ill. ; 28 cm. --
(Transportation research circular, ISSN 0097-8515 ; no. 419)

1. Aged automobile drivers. 2. Automobile driving. 3. Intelligent Vehicle Highway Systems.

26 OCT 94 30494183 TLBAsc

AIDS TO NAVIGATION.

6
97
.33
992

Aids to Navigation Service Force Mix 2000 project / Research and Special Programs Administration, John A. Volpe National Transportation Systems Center. -- Washington, DC : United States Coast Guard, Office of Navigation Safety and Waterway service ; Springfield, Va. : Available through the National Technical Information Service, [1992]
4 v. : ill ; 28 cm.
SIRN: DOT-CG-N-01-92-1.1
1. Aids to navigation. 2. Government vessels--United States. 3. Geographic information systems. 4. Buoys. 5. United States. Coast Guard.--Boats.

Rev-1 10-24-94 TLBAsc

AIR QUALITY MANAGEMENT--CALIFORNIA--SAN DIEGO METROPOLITAN AREA.

TD
886.5
.C2
M47
1991

Methodologies for quantifying the emission reductions of transportation control measures / prepared by Sierra Research, Inc. ; with support from JHK & Associates. -- Sacramento, Calif. : Sierra Research, [1991]
1 v. (various pagings) ; 28 cm.

1. Air--Pollution--California--San Diego Metropolitan Area. 2. Air quality management--California--San Diego Metropolitan Area. 3. Automobiles--California--San Diego Metropolitan Area--Motors--Exhaust gas. 4. Transportation--California--San Diego Metropolitan Area--Planning.

Rev-1 10-31-94 TLBAsc

AIR QUALITY MANAGEMENT--UNITED STATES.

TD
886
.837
N66
1993

Hartgen, David T.
Non-attainment areas speak : present and planned MPO responses to the transportation requirements of the Clean Air Act of 1990 / by David T. Hartgen, Walter E. Martin, Andrew J. Reser. -- Charlotte, NC : Dept. of Geography and Earth Sciences, University of North Carolina at Charlotte, [1993]
125 leaves in various foliations : ill., maps ; 28 cm.
1. Air--Pollution--United States. 2. Air quality management--United States. 3. Transportation and state--United States. 4. Transportation--Environmental aspects--United States. 5. United States. Clean Air Act of 1990.

Rev-1 11-1-94 TLBAsc

AIR TRAFFIC CONTROL.

TL
725.3
.T7
C66
1992

Controller response to conflict resolution advisory prototype / Kim M. Cardosi ... [et al.]. --
Washington, DC : Federal Aviation Administration, Automation Engineering Division ; Springfield, Va. : Available through the National Technical Information Service, [1992]
x, 18 p. ; 28 cm.

1. Air traffic controllers. 2. Air traffic control. 3. Aeronautics, Commercial--Safety measures. 4. Airplanes--Collision avoidance.

Rev-1 11-8-94 TLBAsc

AIRFRAMES--MAINTENANCE AND REPAIR--STUDY AND TEACHING.

TL
671.9
.A26
1992

A & P technican airframe textbook. --
2nd ed. -- Casper, WY : IAP, Inc., c1992.
xxxii 784 p. : ill. ; 28 cm.
ISBN 0-89100-395-9 (pbk.)

1. Airframes--Maintenance and repair--Study and teaching.

07 NOV 94 25202449 TLBAsc 92-3011

AIRPLANES--COCKPITS--WARNING SYSTEMS.

TL
681
.C6
K83
1992

Kuchar, James K.
Advanced terrain displays for transport category aircraft / James K. Kuchar, R. John Hansman, Jr. --
[Washington, D.C.] : Federal Aviation Administration, Research and Development Service ; Springfield, Va. : Available through the National Technical Information Service, [1992]
92 p. in various pagings : ill. (some col.) ; 28 cm.
SIRN: DOT/FAA/RD-92/4
1. Airplanes--Cockpits--Warning systems. 2. Airplanes--Cockpits--Electronic equipment. 3. Air traffic control. 4. Aeronautics--Accidents--Human factors

25 AUG 94 26092380 TLBAsc

AIRPLANES--PILOTING--HANDBOOKS, MANUALS, ETC.

REF.
TL
710
.K43
S78
1993

Kershner, William K.
The student pilot's flight manual : including FAA written test questions (airplanes) plus answers and explanations / William K. Kershner. -- 7th ed. -- Ames : Iowa State University Press, 1993.
viii, 486 p. : ill., maps (some col.) ; 28 cm.
ISBN 0-8138-1612-2 (alk. paper)

1. Airplanes--Piloting--Handbooks, manuals, etc.

02 NOV 94 26854676 TLBAsc 92-36448

AIRPORTS--FINANCE.

HE
9787.4
.F5
A84
1992

Ashford, Norman.
Airport finance / Norman Ashford, Clifton A. Moore. -- New York : Van Nostrand Reinhold, c1992.
xi, 240 p. : ill. ; 24 cm.
ISBN 0-442-00182-4

1. Airports--Finance.

03 OCT 94 24854538 TLBAsc 91-44701

AIRPORTS.

TL
725.3
.M2
D63
1992

Doganis, Rigas.
The airport business / Rigas Doganis. -- London ; New York : Routledge, 1992.
xiii, 226 p. : ill. ; 25 cm.
ISBN 0-415-07877-6 (hbk)

1. Airports. 2. Airports--Management.

04 NOV 94 25045275 TLBAsc 91-44797

AIRPORTS--LAW AND LEGISLATION--UNITED STATES.

KF
2415
.H37
1991

Hardaway, Robert M., 1946-
Airport regulation, law, and public policy : the management and growth of infrastructure / Robert M. Hardaway ; with contributions by James Spensley ... [et al.]. -- New York : Quorum Books, 1991.
xv, 248 p. : ill. ; 25 cm.
ISBN 0-89930-474-5 (alk. paper)

1. Airports--Law and legislation--United States.

09 SEP 94 22710097 TLBAsc 90-22126r93

AIRPORTS--DESIGN AND CONSTRUCTION--COMPETITIONS--UNITED STATES.

Oversize
TL
725
.A55
1990

American airport designs / foreword by Dominick A. Pisano. -- Washington, D.C. : American Institute of Architects Press, [1990]
vi, 96 p. : ill. ; 31 cm.
ISBN 1-55835-025-X

1. Airports--Design and construction--Competitions--United States.

08 SEP 94 22451526 TLBAsc 90-14443

AIRPORTS--MANAGEMENT.

TL
725.3
.M2
G47
1992

Gesell, Laurence E.
The administration of public airports / Laurence E. Gesell. -- 3rd ed. -- Chandler, Ariz. : Coast Aire Publications, c1992.
xii, 498 p. : ill. ; 24 cm.
ISBN 0-9606874-7-5

1. Airports--Management.

03 OCT 94 25622666 TLBAsc 91-76708

AIRPORTS--EUROPE--DIRECTORIES.

REF.
HE
9842
.A1
156

Thomas Cook European airports directory. -- 1993- . -- Lincolnwood (Chicago), Ill. : Passport Books, 1993-
v. : maps ; 21 cm. -- (Thomas Cook airports guide)
Annual.
Other title: Airports guide, Europe.

1. Airports--Europe--Directories.

24 OCT 94 28896058 TLBAsc

AIRPORTS--PLANNING.

TL
725.3
.P5
W45
1992

Wells, Alexander T.
Airport planning & management / Alexander T. Wells. -- 2nd ed. -- Blue Ridge Summit, PA : TAB Books, c1992.
xi, 500 : ill. ; 24 cm.
ISBN 0-8306-3086-4

1. Airports--Planning. 2. Airports--Management.

28 SEP 94 25200529 TLBAsc 92-783

AIRPORTS--PLANNING.

TL
711
.A687r
no.1423

Airport planning, operation, and management. -- Washington, D.C. : National Academy Press, 1993.
v, 61 p. : ill. ; 28 cm. -- (Transportation research record ; 1423)
ISBN 0-309-05570-9

1. Airports--Planning. 2. Airports--Management.

26 OCT 94 30483303 TLBAsc

ASPHALT CEMENT--TESTING.

TE
270
.A54
1994

McGennis, Robert Benton.
Background of SUPERPAVE asphalt binder test methods / [R.B. McGennis, S. Shuler, and H.U. Bahia]. -- [Washington, DC] : Federal Highway Administration, Office of Technology Applications ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
v, 87, [1] p. : ill. ; 28 cm.
SIRN: FHWA-SA-94-069

1. Asphalt cement--Testing. 2. Asphalt cement--Viscosity. 3. Binders (Materials)

06 OCT 94 30955440 TLBAsc

AUTOMOBILES--UNITED STATES--FUEL CONSUMPTION--STATISTICS--PERIODICALS.

REF.
TL
151.6
.H68

Household vehicles energy consumption. -- 1988- . -- Washington, D.C. : Energy Information Administration, Office of Energy Markets and End Use, U.S. Dept. of Energy, 1988-
v. : ill. ; 28 cm.
Continues: Residential transportation energy consumption survey. Consumption patterns of household vehicles.
ISSN 1057-5006 = Household vehicles energy consumption

1. Transportation, Automotive--United States--Energy consumption--Statistics--Periodicals. 2. Automobiles--United States--Fuel consumption--Statistics--Periodicals.

20 JUL 94 21570869 TLBAsc 91-642237

BICYCLE COMMUTING.

BE
131
.T687tts
no.4

Doolittle, John T.
Integration of bicycles and transit / John T. Doolittle [and] Ellen Kret Porter. -- Washington, D.C. : National Academy Press, 1994.
[vi], 58 p. : ill. ; 28 cm. -- (Synthesis of transit practice, ISSN 1073-9880 ; 4)
ISBN 0-309-05656-X

1. Bicycles. 2. Bicycle commuting.

31 OCT 94 30560025 TLBAsc 94-60582

BRIDGES, CONCRETE--CORROSION.

TG
315
.B93
1993

Evaluation of agents for lubrication and temporary corrosion protection of post-tension tendons / W.M. Kittleman ... [et al.]. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xv, 104 p. : ill. ; 28 cm. -- (Research report ; 1264-1)
SIRN: FHWA/TX-94+1264-1

1. Bridges, Concrete--Corrosion. 2. Bridges, Concrete--Maintenance and repair. 3. Tendons (Prestressed concrete)--Corrosion. 4. Post-tensioned pre stressed concrete construction.

15 NOV 94 31072937 TLBAsc

BRIDGES, CONCRETE--DESIGN AND CONSTRUCTION.

TG
335
.R62
M42
1993

Roberts, C. L.
Measurement based revisions for segmental bridge design and construction criteria / by C.L. Roberts, J.E. Breen, M.E. Kreger ; conducted for the Texas Department of Transportation in cooperation with the U.S. Department of Transportation, Federal Highway Administration. -- Austin : Center for Transportation Research, Bureau of Engineering Research, University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xxvii, 348 p. : ill. ; 28 cm. -- (Research report ; 1234-3F)
SIRN: FHWA/TX-94+1234-3F

18 NOV 94 31431940 TLBAsc SEE NEXT CRD

BRIDGES--DESIGN AND CONSTRUCTION.

Oversize
TG
300
.I66
B74
1995

Ioniae, Demetrios E.
Bridge engineering : design, rehabilitation, and maintenance of modern highway bridges / Demetrios E. Ioniae. -- New York : McGraw-Hill, c1995.
xxiv, 470 p. : ill., map ; 28 cm.
ISBN 0-07-065073-X (alk. paper)

1. Bridges--Design and construction. 2. Bridges--Maintenance and repair.

Rev-1 11-16-94 TLBAsc 94-12858

BUS LANES--UNITED STATES.

BE
336
.B8
B88
1994

The Bus transit system : its underutilized potential / prepared by Vukan Vuchic ... [et al.]. -- Washington, D.C. : Federal Transit Administration ; Distributed in cooperation with Technology Sharing Program, U.S. Dept. of Transportation, [1994]
vi, 76 p. : ill. ; 28 cm.

1. Bus lanes--United States. 2. High occupancy vehicle lanes--United States. 3. Bus lines--United States--Planning. 4. Local transit--United States--Planning.

Rev-2 10-24-94 TLBAsc

BUSES--ACCESS FOR THE PHYSICALLY HANDICAPPED.

HV
3023
.A2
N372
1992

Francis, Gerald A.
Guideline specifications for passive lifts, active lifts, wheelchair ramps and securement devices / by Gerald A. Francis and David Norstrom. -- Rev. ed. -- Washington, D.C. : Federal Transit Administration, Office of Technical Assistance and Safety : Distributed in cooperation with Technology Sharing Program, [1992]
1 v. (various pagings) : ill. ; 28 cm.
1. Buses--Access for the physically handicapped. 2. Wheelchairs--Specifications--United States. 3. Ramps (Walkways)--Specifications. 4. Physically ha ndicapped--Transportatio n--Law and legislation-- United States.

19 JUL 94 27475573 TLBAsc

BUSES--FUEL.

HE
131
.T687tts
no.1

Hemsley, Geoffrey V.
Safe operating procedures for alternative fuel buses / Geoffrey V. Hemsley. -- Washington, D.C. : National Academy Press, 1993.
48 p. : ill. ; 28 cm. -- (Synthesis of transit practice, ISSN 1073-8880 ; 1)
ISBN 0-309-05321-8

1. Buses--Fuel. 2. Buses--Safety measures.

31 OCT 94 30054933 TLBAsc 93-61805

BUSES--UNITED STATES--SAFETY MEASURES.

HE
5614.2
.B96
1994

Byman, Judith A.
Bus and passenger accident prevention / [Judith Byman, William T. Hathaway]. -- Washington, D.C. : Federal Transit Administration ; [Springfield, VA : Available through the National Technical Information Service, 1994]
84 p. in various pagings : ill. ; 28 cm.

1. Buses--United States--Safety measures. 2. Bus accidents--United States. 3. Local transit--United States--Safety measures.

09 SEP 94 31007800 TLBAsc

C (COMPUTER PROGRAM LANGUAGE)

QA
76.73
.C15
P47
1994

Perry, Gregory J.
Absolute beginner's guide to C / Greg Perry. -- 2nd ed. -- Indianapolis, Ind. : Sams Pub., c1994.
xxv, 406 p. : ill. ; 23 cm.
ISBN 0-672-30510-0 (pbk)

1. C (Computer program language)

Rev-1 10-26-94 TLBAsc GB94-42817

C (COMPUTER PROGRAM LANGUAGE)--PROGRAMMED INSTRUCTION.

QA
76.73
.C15
J65
1994

Jones, Bradley.
Teach yourself advanced C in 21 days / Bradley L. Jones, Gregory L. Guntle. -- 1st ed. -- Indianapolis, Ind. : Sams, c1994.
xxvii, 878 p. : ill. ; 23 cm. + 1 floppy disk (3 1/2 in.).
ISBN 0-672-30471-6

1. C (Computer program language)--Programmed instruction.

rev-1 10-26-94 TLBAsc 93-87167

CENTRAL ARTERY (BOSTON, MASS.)

HE
378
.B71
T54sde
1994

South Boston truck access and circulation study : final report/ prepared for the Massachusetts Highway Department by Bechtel/Parsons Brinckerhoff. -- [Boston, Mass.] : Bechtel/Brinckerhoff, 1994.
1 v. (various pagings) : ill, maps ; 28 cm.

1. Central Artery (Boston, Mass.) 2. Third Harbor Tunnel (Boston, Mass.) 3. Interstate 90 (Mass.) 4. Tunnels--Massachusetts--Boston. 5. South Boston Haul Road (Boston, Mass.) 6. Road construction--Massachusetts--Boston.

Rev-1 11-15-94 TLBAsc

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY. LINCOLN DIVISION.

Oversize
TF
25
.C47
H65
1992

Holck, Alfred J. J.
The hub of Burlington lines West : Lincoln and the Lincoln Division of the Burlington route / by Alfred J.J. Holck. -- 2nd ed. -- David City, Neb. : South Platte Press, 1992, c1891
380 p. : ill., maps ; 29 cm.
ISBN 0-942035-22-4

1. Chicago, Burlington & Quincy Railroad Company. Lincoln Division. 2. Railroads--Nebraska--Lincoln Region.

07 SEP 94 29440114 TLBAsc

CHOICE OF TRANSPORTATION.

HE
305
.W74
F37
1992

Wright, Charles L.
Fast wheels, slow traffic : urban transport choices / Charles L. Wright. -- Philadelphia : Temple University Press, 1992.
xvi, 288 p. ; 24 cm. -- (Conflicts in urban and regional development)
ISBN 0-87722-811-2 (alk. paper)

1. Urban transportation. 2. Choice of transportation.

08 NOV 94 24009862 TLBAsc 91-23983r92

CULVERTS--DESIGN AND CONSTRUCTION.

```
E
31      Culvert distress and failure case
I687r     histories and trenchless technology.
o.1431    -- Washington, D.C. : National
          Academy Press, 1994.
          v, 82 p. : ill. ; 28 cm. --
          (Transportation research record ; 1431)
          ISBN 0-309-05509-1
```

1. Culverts--Design and construction. 2. Culverts--Testing. 3. Tunneling. 4. Trenchless construction.

01 NOV 94 31352032 TLBAsc

CULVERTS--DESIGN AND CONSTRUCTION.

```
E
15      McEnroe, Bruce M.
M33       Development of hydraulic design
48        charts for Type IV end sections for
993       pipe culverts / by Bruce M. McEnroe,
          Jeffrey A. Bartley ; for Kansas
          Department of Transportation. --
          [Topeka, Kan. : Kansas Dept. of
          Transportation, 1993]
          iii, 57, A-1 - A-3 p. : ill. ; 28 cm.
          STRN: K-TRAN: KSU-93-5
```

1. Pipe--Hydrodynamics--Charts, diagrams, etc. 2. Hydraulics--Charts, diagrams, etc. 3. Culverts--Design and construction. 4. Road drainage.

Rev-1 11-14-94 TLBAsc

ELECTRONIC TRAFFIC CONTROLS--EVALUATION.

```
E
.28     Evaluation of flashing traffic signal
E933      operation / by Kent C. Kacir ... [et
.993      al.]. -- College Station, TX : Texas
          Transportation Institute, the Texas
          A&M University System ; [Springfield,
          Va. : Available through the National
          Technical Information Service, 1993]
          263 p. in various pagings : ill. ; 28
          cm. -- (Research report / Texas
          Transportation Institute ; 1297-2F)
          STRN: FHWA/TX-94/1297-2F
```

1. Traffic signs and signals--Texas--Evaluation. 2. Electronic traffic controls--Evaluation.

Rev-1 11-4-94 TLBAsc

EMBANKMENTS--DESIGN AND CONSTRUCTION.

```
HE
131     Lightweight artificial and waste
.I687r    materials for embankments over soft
no.1422   soils. -- Washington, D.C. : National
          Academy Press, 1993.
          v, 70 p. : ill. ; 28 cm. --
          (Transportation research record ; 1422)
          ISBN 0-309-05568-5
```

1. Embankments--Design and construction. 2. Soil stabilization.

26 OCT 94 30483224 TLBAsc

EXPRESS HIGHWAYS--ECONOMIC ASPECTS--NORTH CAROLINA.

```
HE
336     O'Callaghan, Janet E.
.E3       I-40 economic impact study : business
O22       survey / by Janet E. O'Callaghan, David
1990      T. Hartgen, Alfred W. Stuart. --
          Charlotte, N.C. : University of North
          Carolina at Charlotte, Transportation
          Academy, [1990]
          iii, 41, ii, [6] : ill. ; 28 cm. --
          (Transportation publication report ;
          no. 35)
```

1. Express highways--Economic aspects--North Carolina. 2. Roads--Economic aspects--North Carolina. 3. Industry--North Carolina--Location.

Rev-1 11-15-94 TLBAsc

FISHING BOATS--DATABASES.

```
VM
431     Thompson, Burt W.
.T56      Identification of sources and types
1993      of commercial fishing vessel population
          data currently available within the
          United States. Vol. I / Burt W.
          Thompson, Karen Fischer, Debbie Meehan.
          -- Groton, Conn. : U.S. Coast Guard
          Research and Development Center ;
          Springfield, Va. : Available through
          the National Technical Information
          Service, [1993]
          vi, 20, A-6, B-89 p. : ill. ; 28 cm.
          STRN: CG-D-03-94
```

1. Fishing boats--Databases. 2. Boats and boating--Registration and transfer--Databases.

23 SEP 94 30887972 TLBAsc

FREWEV (COMPUTER PROGRAM)

```
HE
336     FREWEV, a design and analysis model for
.I7       major freeway weaving sections :
F74       user's guide / Lannon Leiman ... [et
1992      al.]. -- Berkeley, Calif. : Institute
          of Transportation Studies, University
          of California, [1992]
          68 leaves : ill. ; 28 cm. --
          (Research report / Institute of
          Transportation Studies, University of
          California, Berkeley, ISSN 0192-4085 ;
          UCB-ITS-RR-92-5)
          STRN: FHWA/CA/UCB-ITS-RR-92-5
```

1. Traffic flow--Computer simulation. 2. Highway capacity. 3. FREWEV (Computer program)

19 JUL 94 27350400 TLBAsc

FWD-DYN (COMPUTER FILE)--HANDBOOKS, MANUALS, ETC.

```
TE
251.5   Foinquinos, Rafael.
.F65      FWD-DYN, a computer program for
1993      forward analysis and inversion of
          falling weight deflection data / by
          Rafael Foinquinos, Jose M. Roesset,
          Kenneth H. Stokoe. -- Austin : Center
          for Transportation Research, Bureau of
          Engineering Research, the University of
          Texas at Austin ; [Springfield, Va. :
          Available through the National
          Technical Information Service, 1993]
          viii, 88 p. : ill. ; 28 cm. --
          (Research report ; no. 1970-1F)
          STRN: TX-94-1970-1F
```

1. Pavements--Texas--Performance. 2. Pavements--Texas--Testing. 3. Non-destructive testing. 4. FWD-DYN (Computer file)--Handbooks, manuals, etc.

20 SEP 94 30891144 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.S53
A87
1993

Siegfried, Robert H.
Automated incident management plan using geographic information systese technology for traffic management centers / by Robert H. Siegfried and Nitin Vaidya. -- College Station, Tex. : Texae Traneportation Institute, Texae A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
378 p. in varioue paginge : ill. ; 28 cm. -- (Research report ; 1928-1F)
STRN: FHWA/TXDOT-94/1928-1F
1. Express highways--Texae--Houston--Management. 2. Disabled vehicles on express highways--Texas--Houston. 3. Geographic in formation eyetems.

Rev-1 11-8-94 TLBAsc

GEOGRAPHIC INFORMATION SYSTEMS.

G
70.2
.J63
G46
1993

Johnson, Brad H.
A geographic information eyetem environment for transportation management systems / by Brad H. Johnson, Michael J. Demetsky. -- Charlottesville, Va. : School of Engineering and Applied Science, Dept. of Civil Engineering, University of Virginia, [1993]
vii, 56, [1] p. : ill., maps ; 28 cm.
STRN: UVA/529685/CE93/101

1. Geographic information eyetems. 2. Urban transportation--Management. 3. Pavements--Maintenance and repair--Management.

Rev-1 11-14-94 TLBAsc

HAZARDOUS SUBSTANCES--TRANSPORTATION.

HE
131
.T687sy
no.186

Ruesell, Eugene.
Highway maintenance proceduree dealing with hazardous material incidents / Eugene R. Ruesell. -- Washington, D.C. : National Academy Press, 1994.
60 p. : ill. ; 28 cm. -- (Synthesis of highway practice ; 196)
ISBN 0-309-05651-9

1. Hazardous eubetancee--Traneportation. 2. Roads--Maintenance and repair.

08 NOV 94 31196335 TLBAsc 94-76362

HIGH SPEED TRAINS--SAFETY MEASURES--CONGRESSES.

HE
131
.T687c
no.432

Workshop on Safety Research Related to High-Speed Rail and Maglev Passenger Syetems (1993 : Nordic Hills, Ill.)
Workshop on Safety Research Related to High-Speed Rail and Maglev Passenger Syetems / Traneporation Research Board [and] Federal Railroad Adminietration. -- Washington, D.C. : Transportation Research Board, National Research Council, [1994]
39 p. ; 28 cm. -- (Transportation research circular, ISSN 0097-8515 ; no. 432)
1. High speed trains--Safety measures--Congreeeee. 2. Magnetic levitation ve hicles--Safety seasures--Con greeeee.

Rev-1 11-2-94 TLBAec

HIGHWAY ENGINEERING--COMPUTER PROGRAMS--EVALUATION.

HE
206.3
.L36
A87
1993

LaPlante, Roger.
Aseeeement of computer-aeeieted interactive applications / [Roger LaPlante]. -- Washington, D.C. : U.S. Federal Highway Adminietration, Office of Technology Applications, [1993]
x, 45 p. : ill. ; 28 cm.
STRN: FHWA-SA-93-040

1. Interactive coaputer eyeteas--Evaluation. 2. Highway engineering--Computer programs--Evaluation.

Rev-1 11-14-94 TLBAsc

HOUSING--MASSACHUSETTS--BOSTON METROPOLITAN AREA--STATISTICS.

HD
7304
.B7
P46
1991

People and houeing change in metropolitan Boston : a firet look at the 1990 ceneus. -- Boston, MA (60 Temple Pl., Boston 02111) : Metropolitan Data Center, Metropolitan Area Planning Council, [1991]
1 v. : ill. ; 28 cm.

1. Housing--Maeeachuaette--Boston Metropolitan Area--Statietics. 2. Boeton Metropolitan Area (Maee.)--Population--Statistice.

15 NOV 94 26403636 TLBAsc 92-620780

HYDRAIN (COMPUTER FILE)

TE
215
.Y68
H923
1994

Young, G. Kenneth.
HYDRAIN, integrated drainage deeign computer eyetem : version 5.0, Volumes I to VII / [G. Kenneth Young and Joseph S. Krolak]. -- McLean, Va. : Federal Highway Administration ; [Springfield, Va. : Available through the National Technical Information Service, 1994].
686 p. in various pagings : ill. ; 28 cm.
STRN: FHWA-RD-92-061

Rev-1 10-24-94 ILBAsc SEE NEXT CRD

INSTRUMENT LANDING SYSTEMS.

TL
686
.L33
H95
v.1

Mangold, Suean J.
Human factore design principlee for inatrument approach procedure charts. Volume I, Readability / by Battelle. -- Washington, DC : Federal Aviation Administration, Research and Development Service ; [Springfield, VA : Available through the National Technical Information Service, 1992]
xii, 164 p. ; 28 cm.
STRN: DOT/FAA/RD-92/16,1

1. Inetrument landing eyeteme. 2. Aeronautical charts. 3. Airplanee--Cockpite. 4. Airplanee--Electronic equipment.

Rev-1 10-31-94 TLBAsc

INSURANCE, POLLUTION LIABILITY--
UNITED STATES.

B
894.3 United States. General Accounting
.33 Office.
194 Hazardous waste : an update on the cost and availability of pollution insurance : report to the Honorable Nancy L. Johnson, House of Representatives / United States General Accounting Office. -- Washington, D.C. : The Office ; Gaithersburg, MD (P.O. Box 6015, Gaithersburg 20884-6015) : The Office [distributor, 1994]
72 p. : ill., map ; 28 cm.

1. Insurance, Pollution liability--United States.

15 NOV 94 30423189 TLBAec

INTELLIGENT VEHICLE HIGHWAY SYSTEMS.

E
28.3 Advanced technology for road transport
A36 : IVHS and ATT / Ian Catling, editor.
894 -- Boston : Artech House, c1994.
xii, 376 p. : ill. ; 24 cm.
ISBN 0-89006-613-2

1. Intelligent Vehicle Highway Systems. 2. Telematics.

21 OCT 94 28259130 TLBAec 93-38272

INTELLIGENT VEHICLE HIGHWAY SYSTEMS--
ARIZONA.

[E
228.3 Hill, Christopher.
.H54 MIDAS : Motorist Information and
452 Driver Automation Systems / prepared by
1991 Chrisopher Hill, Neil Emmott. -- Phoenix, Ariz. : Arizona Dept. of Transportation, [1991]
1 v. (various pagings) : ill., maps ; 28 cm.
SIRN: FHWA-AZ94-356-1

1. Intelligent Vehicle Highway Systems--Arizona. 2. Traffic engineering--Arizona.

18 NOV 94 31278415 TLBAec

LOCAL AREA NETWORKS (COMPUTER
NETWORKS)--HANDBOOKS, MANUALS, ETC.

TK
5105.7 Simonds, Fred.
.S56 McGraw-Hill LAN communications
1994 handbook / Fred Simonds. -- New York : McGraw-Hill, c1994.
xiv, 444 p.: ill.; 24 cm. -- (McGraw-Hill series on computer communications)
ISBN 0-07-057442-1

1. Local area networks (Computer networks)--Handbooks, manuals, etc.

16 SEP 94 28548451 TLBAec 93-48540

LOCAL TRANSIT--EMPLOYEES.

HE
131 Hartman, Ronald J.
.T687tts Incentive programs to improve transit
no.3 employee performance / Ronald J. Hartman, Elaine M. Kurtz, Elizabeth Moser. -- Washington, D.C. : National Academy Press, 1994.
44 p. : ill. ; 28 cm. -- (Synthesis of transit practice, ISSN 1073-8880 ; 3)
ISBN 0-309-05655-1

1. Incentive awards. 2. Local transit--Employees. 3. Local transit--Personnel management.

31 OCT 94 30560075 TLBAec 94-60581

LOCAL TRANSIT--EVALUATION.

HE
131 Simplified guidelines for evaluating
.T687trr transit service in small urban areas
no.8 / David R. Miller ... [et al.]. -- Washington, D.C. : Transportation Research Board, National Research Council, [1984]
119 p. : ill. ; 28 cm. -- (Report / National Cooperative Transit Research & Development Program, ISSN 0732-4839 ; 8)
ISBN 0-309-03852-9 (pbk.)

1. Local transit--Evaluation.

Rev-1 11-7-94 TLBAsc 84-72603r86

LOCAL TRANSIT--LABOR PRODUCTIVITY.

HE
4311 Lave, Charles A.
.L38 Measuring the decline in transit
M42 productivity in the U.S. / Charles
1993 Lave. -- Berkeley, Calif. : University of California Transportation Center, [1993?]
p. 115-124 ; 28 cm. -- (Reprint / University of California Transportation Center ; no. 159)

1. Local transit--United States--Labor productivity. 2. Federal aid to transportation--United States. 3. Local transit--Labor productivity.

14 NOV 94 30434791 TLBAec

LOCOMOTIVES--UNITED STATES--HISTORY.

TJ
603.2 White, John H., 1933-
.W54 [American locomotives]
B57 A history of the American locomotive
1979 : its development, 1830-1880 / John H. White, Jr. -- New York : Dover Publications, 1979, c1968.
xxiii, 504 p. : ill. ; 21 x 23 cm.
ISBN 0-486-23818-0

1. Locomotives--United States--History.

Rev 1 11-15-94 TLBAsc 78-52524r862

LOGAN INTERNATIONAL AIRPORT (MASS.)--PLANNING.

HE
9787.6
.B7
P336
1994

Boston-Logan International Airport : parking consolidation project / prepared by Vanasse Hangen Brustlin, Inc. ... [et al.]. -- [Watertown, Mass.] : Vanasse Hangen Brustlin, Inc., 1994.
1 v. (various pagings) : ill., maps, plans ; 28 cm.

1. Logan International Airport (Mass.)--Planning. 2. Logan International Airport (Mass.)--Environmental aspects. 3. Airports--Massachusetts--Boston Metropolitan Area--Planning. 4. Airport parking facilities--Massachusetts--Boston Metropolitan Area.

Rev-1 11-21-94 TLBAsc

LOGAN INTERNATIONAL AIRPORT (MASS.)--PLANNING.

HE
9787.6
.B7
I42
1993

Boston-Logan International Airport : Terminal A replacement / prepared by Vanasse Hangen Brustlin, Inc. ... [et al.]. -- [Watertown, Mass.] : Vanasse Hangen Brustlin, Inc., 1993.
2 v. : ill., maps, plans ; 28 cm.

1. Logan International Airport (Mass.)--Planning. 2. Logan International Airport (Mass.)--Environmental aspects. 3. Airports--Massachusetts--Boston Metropolitan Area--Planning. 4. Airport terminals--Massachusetts--Boston Metropolitan Area.

Rev-1 11-21-94 TLBAsc

LOW-VOLUME ROADS.

HE
131
.I687r
no.1426

Low-volume roads : environmental planning and assessment, modern timber bridges, and other issues. -- Washington, D.C. : National Academy Press, 1993.
v, 80 p. : ill. ; 28 cm. -- (Transportation research record ; 1426)
ISBN 0-309-05573-3

1. Low-volume roads. 2. Bridges, Wooden.

26 OCT 94 30483356 TLBAsc

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--BUS LINES--EVALUATION.

HE
5634
.B718
C62
1993

Bus service delivery system. -- [Boston?] : Comsis, [1993]
2 v. : ill. ; 28 cm.

1. Bus lines--Massachusetts--Boston Metropolitan Area. 2. Bus lines--Massachusetts--Boston Metropolitan Area--Statistics. 3. Massachusetts Bay Transportation Authority--Bus lines--Evaluation. 4. Massachusetts Bay Transportation Authority--Contracting out. 5. Privatization--Massachusetts.

Rev-1 11-15-94 TLBAsc 94-620070

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--CIRCUMFERENTIAL TRANSIT.

HE
4491
.B78
P74
1989

Draft circumferential transit feasibility study / prepared for the Massachusetts Bay Transportation Authority by TAMS Consultants, Inc. ... [et al.]. -- [Boston, Mass.] : TAMS Consultants, 1989.
130 leaves : ill., maps, 28 cm.

1. Local transit--Massachusetts--Boston Metropolitan Area--Planning. 2. Transportation--Massachusetts--Boston Metropolitan Area--Planning. 3. Massachusetts Bay Transportation Authority--Circumferential transit. 4. Massachusetts Bay Transportation Authority--Planning.

Rev-1 11-7-94 TLBAsc

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY--RIDERSHIP.

HE
4491
.B719
R645
1994

Gómez-Ibáñez, José A., 1948-
Hard choices : Boston's transit deficits and ridership / by Jose A. Gomez-Ibanez with Zhi Liu, M. Baher El-Hifnawi and Lara Belkind. -- Cambridge, Mass. : Taubman Center for State and Local Government, John F. Kennedy School of Government, Harvard University, 1994.
1 v. (various pagings) ; 28 cm.

1. Massachusetts Bay Transportation Authority--Ridership. 2. Massachusetts Bay Transportation Authority--Fares. 3. Local transit--Massachusetts--Boston Metropolitan Area--Ridership.

Rev-1 10-21-94 TLBAsc

MYSTIC AVENUE (SOMERVILLE, MASS.)

HE
356.5
.B779
A22
1994

Abbott, Mark.
Mystic Avenue/Route 28/I-93 interchange improvement study : Somerville, Massachusetts / authors Mark Abbott, Russ Bond ; graphics Mark Abbott, Jane M. Gillis. -- [Boston, Mass.] : Central Transportation Planning Staff, 1994.
1 v. (various pagings) : maps (some fold-out) ; 28 cm.

1. Roads--Massachusetts--Somerville--Interchanges and intersections. 2. Highway planning--Massachusetts--Somerville. 3. Interstate 93 (Mass.) 4. Route 28 (Mass.) 5. Mystic Avenue (Somerville, Mass.)

18 NOV 94 30497065 TLBAsc

NATIONAL PARKS AND RESERVES--UNITED STATES--GUIDEBOOKS.

REF.
E
160
.A2
1994

AAA guide to the national parks / American Automobile Association ; compiled by Doreen Russo. -- New York : Collier Books ; Toronto : Maxwell Macmillan Canada ; New York : Maxwell Macmillan International, 1994.
xiii, 320 p. : col. ill., maps ; 26 cm.

1. National parks and reserves--United States--Guidebooks.

25 OCT 94 30742901 TLBAec 92-27001

ORGANIZATIONAL EFFECTIVENESS.

D
8.8
A42
57
994

Albrecht, Karl.
The Northbound train : finding the purpose, setting the direction, shaping the destiny of your organization / Karl Albrecht. -- New York : AMACOM, c1994.
x, 213 p. : ill. ; 24 cm.
ISBN 0-8144-0233-X

1. Organizational effectiveness. 2. Strategic planning. 3. Customer service.

Rev-1 11-8-94 TLBAsc 93-49388

OVERWATER FLYING.

L
11
026
47
990

De Remer, Dale.
Water flying concepts : an advanced text on wilderness water flying / by Dale De Remer. -- 2nd ed. -- Casper, WY : IAP, Inc., c1990.
1 v. (various pagings) : ill.; 22 cm.
ISBN 0-89100-374-6

1. Overwater flying. 2. Seaplanes--Piloting.

16 SEP 94 23604068 TLBAsc

PASSER IV-94 (COMPUTER FILE)

TE
228
.C52
P37
1993

Chaudhary, Nadeem A.
PASSER IV-94, version 1.0 : user/reference manual / by Nadeem A. Chaudhary and Carroll J. Messmer. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xv, 85 p. : ill. ; 28 cm. -- (Research report ; 1271-1F)
STRN: FHWA/TX-94/1271-1F
1. Traffic flow--Data processing--Handbooks, manuals, etc. 2. Electronic traffic controls. 3. PASSER IV-94 (Computer file)

Rev-1 11-4-94 TLBAsc

PAVEMENTS, ASPHALT.

HE
131
.T687r
no.1427

Pavement surface courses, stone mastic asphalt pavements, and asphalt concrete recycling. -- Washington, D.C. : National Academy Press, 1993.
v, 60 p. : ill. ; 28 cm. -- (Transportation research record ; 1427)
ISBN 0-309-05500-8

1. Pavements, Asphalt. 2. Pavements, Asphalt concrete--Recycling.

26 OCT 94 305063J1 TLBAsc

PAVEMENTS, ASPHALT CONCRETE--RECYCLING.

HE
131
.T687sy
no.193

Button, Joe W.
Hot in-place recycling of asphalt concrete / Joseph W. Button, Dallas N. Little, and Cindy K. Estakhri. -- Washington, D.C. : National Academy Press, 1994.
69 p. : ill. ; 28 cm. -- (National Cooperative Highway Research Program Synthesis of highway practice, ISSN 0547-5570 ; 193)
ISBN 0-309-05324-2

1. Pavements, Asphalt concrete--Recycling.

26 OCT 94 31037653 TLBAsc 94-76360

PAVEMENTS, ASPHALT--TESTING.

HE
131
.T687r
no.1417

Asphalt concrete mixtures. -- Washington, D.C. : National Academy Press, 1993.
viii, 186 p. : ill. ; 28 cm. -- (Transportation research record ; 1417)
ISBN 0-309-05565-2

1. Pavements, Asphalt--Testing. 2. Pavements, Asphalt Concrete--Testing. 3. Asphalt--Testing.

18 JUL 94 30447228 TLBAsc

PAVEMENTS--LIVE LOADS--TESTING.

TE
270
.N64
E82
1993

Nokes, William.
Evaluation of mechanistic procedures for assessment of structural section performance / [W.A. Nokes]. -- [Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1993]
240 p. in various pagings : ill. ; 28 cm.
STRN: FHWA-CA/TL-93-03
1. Pavements, Asphalt concrete--Testing. 2. Pavements--Live loads--Testing. 3. Elasticity.

08 NOV 94 30660013 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR.

HE
131
.T687r
no.1435

Pavement and traffic monitoring and evaluation. -- Washington, D.C. : National Academy Press, 1994.
vii, 187 p. : ill. ; 28 cm. -- (Transportation research record, ISSN 0361-1981 ; no. 1435)
ISBN 0-309-05512-1

1. Pavements--Maintenance and repair. 2. Pavements--Testing. 3. Pavements--Performance.

18 NOV 94 31457532 TLBAsc

PAVEMENTS--MAINTENANCE AND REPAIR--MANAGEMENT.

HE
131
.I687n
no.363

Role of highway maintenance in integrated management systems / M.J. Markow ... [et al.]. -- Washington, D.C. : National Academy Press, 1994.
9, 131 p. : ill. ; 28 cm. -- (Report / National Cooperative Highway Research Program ; 363)
ISBN 0-309-05361-7

1. Roads--Maintenance and repair--Management. 2. Pavements--Maintenance and repair--Management.

26 OCT 94 30795272 TLBAsc 94-60428

RAILROADS--CARS--MAINTENANCE AND REPAIR.

HE
131
.I687ttr
no.1

Mulholland, Ian P.
Artificial intelligence for transit railcar diagnostics / Ian P. Mulholland and Raymond A. Oren. -- Washington, D.C. : National Academy Press, 1994.
56 p. ; 28 cm. -- (TCRP report ; 1)
ISBN 0-309-05364-1

1. Local transit. 2. Railroads, Local and light--Cars--Maintenance and repair. 3. Artificial intelligence--Transportation applications. 4. Railroads--Cars--Maintenance and repair.

31 OCT 94 31224228 TLBAsc 94-60910

PEDESTRIAN FACILITIES--MATHEMATICAL MODELS.

HE
336
.P43
P34
1994

Palamarthy, Srinivas.
Models of pedestrian crossing behavior at signalized intersections / by Srinivas Palamarthy, Hani S. Mahmassani, Randy B. Machemehl. -- Austin, Tex. : Center for Transportation Research, Bureau of Engineering Research, the University of Texas at Austin ; [Springfield, Va. : Available through the National Technical Information Service, 1994]
xii, 92 p. : ill. ; 28 cm. -- (Research report ; 1296-1)
STRN: FHWA/TX-94+1296-1

Rev-1 11-4-94 TLBAsc SEE NEXT CRD

REGIONAL PLANNING--TRANSPORTATION--NORTH CAROLINA.

HE
308
.C33
I87
1990

Issues for a regional transportation authority : report of a discussion forum. -- Charlotte, N.C. : University of North Carolina at Charlotte, Urban Institute, [1990]
12 p. : maps ; 28 cm.

1. Regional planning--Transportation--North Carolina. 2. Transportation--North Carolina--Planning. 3. Urban transportation--North Carolina--Planning.

18 JUL 94 27655031 TLBAsc

RAILROAD ACCIDENTS--UNITED STATES.

Oversize
HE
1780
.M35
1993

Mass transit rail accident investigation : student guide / Transportation Safety Institute ; Research and Special Programs Administration, Volpe National Transportation Systems Center ; Federal Transit Administration. -- [Oklahoma City, Ok : Transportation Safety Institute, 1993]
1 v. (various pagings) : ill. ; 30 cm.

1. Railroad accidents--United States. 2. Railroads--United States--Safety measures. 3. Railroads--Safety measures.

Rev-2 7-18-84 TLBAsc

REINFORCING BARS--TESTING.

TA
683.42
.D37
B66
1993

Darwin, David.
Bond strength of grouted reinforcing bars / by David Darwin, Shahin Salasizavaregh. -- Lawrence, Kan. : University of Kansas Center for Research, [1993]
ix, 139 p. : ill. ; 28 cm. -- (Structural engineering and engineering materials. SM report ; no. 32)

1. Reinforcing bars--Testing.

Rev-1 11-8-94 TLBAsc

RAILROADS.

TF
145
.A75
R34
1990

Armstrong, John H.
The railroad, what it is, what it does : the introduction to railroading / John H. Armstrong. -- 3rd ed. -- Omaha, NE : Simmons-Boardman, 1990.
iii, 270 p. : ill., forms, maps ; 23 cm.
ISBN 0-911382-04-6 (pbk.)

1. Railroads. 2. Railroad engineering. 3. Railroads--Management.

Rev-1 11-15-94 TLBAsc

RETAINING WALLS--DESIGN AND CONSTRUCTION.

TA
770
.M67
M66
1993

Morris, Derek V.
Monitoring of cement stabilized soil retaining walls / by Derek V. Morris. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xiii, 66 p. : ill. ; 28 cm. -- (Research report ; 187-23)
STRN: FHWA/TX-94/187-23
I. Roads--Texas--Embankments. 2. Retaining walls--Texas--Design and construction. 3. Soil cement. 4. Roads--Embankments. 5. Retaining walls--Design and construction.

Rev-1 11-14-94 TLBAsc

ROAD DRAINAGE.

HE
.31 Field performance of subsurface
.I687r drainage. -- Washington, D.C. :
no.1425 National Academy Press, 1993.
v, 63 p. : ill. ; 28 cm. --
(Transportation research record ; 1425)
ISBN 0-309-05572-5

1. Road drainage. 2. Subsurface drainage.

26 OCT 94 30483397 TLBAec

ROAD DRAINAGE.

HE
131 Subsurface drainage, soil-fluid
.I687r interface phenomena, and management
no.1434 of unpaved surfaces. -- Washington,
D.C. : National Academy Press, 1994.
v, 96 p. : ill. ; 28 cm. --
(Transportation research record ; 1434)
ISBN 0-308-05511-3

1. Road drainage. 2. Subsurface drainage. 3. Roads, Earth. 4. Roads, Gravel.

26 OCT 94 31351931 TLBAec

ROAD MARKINGS.

TE
203 Zwahlen, Helmut T.
.Z92 Optimal application and placement of
067 roadside reflective devices for curves
1993 on two-lane rural highways / prepared by Helmut T. Zwahlen. -- Athens : Ohio University, Dept. of Industrial and Systems Engineering ; Springfield, Va. : National Technical Information Services, [1993]
ix, 95 p. : ill. ; 28 cm.
STRN: FHWA/OH-94/011

1. Road markings. 2. Reflectors (Safety devices) 3. Roads--Ohio--Safety measures.

Rev-1 10-31-94 TLBAec

ROAD MARKINGS--MATERIALS--EVALUATION.

TE
203 Chapman, Bill.
.C53 Cost-effective marking and
1994 delineation materials for highways / prepared by Bill Chapman. --
[Sacramento, Calif.] : State of California, Dept. of Transportation, Division of New Technology, Materials and Research ; [Springfield, VA : Available through the National Technical Information Service, 1994]
150 p. in various pagings : ill. ; 28 cm.
STRN: FHWA-CA/TL-94/06

1. Road markings--Materials--Evaluation. 2. Thermoplastics--Evaluation.

12 SEP 94 30688027 TLBAec

ROADS--DESIGN AND CONSTRUCTION--AUTOMATION.

TE
223 Applications of robotics and other
.A66 automated techniques to the
1993 construction, maintenance, and inspection of highway systems / by Walter W. Boles ... [et al.]. --
College Station, Tex. : Texas Transportation Institute, Texas A & M University System ; [Springfield, Va. : available through National Technical Information Service, 1993]
xiii, 201 p. : ill. ; 28 cm. --
(Research report ; 1440-1F)
STRN: FHWA/TX-93/1440-1F
1. Robotics. 2. Roads--Maintenance and repair--Automation. 3. Roads--Design and construction--Automation.

Rev-1 11-14-94 TLBAec

ROADS--EMBANKMENTS--MAINTENANCE AND REPAIR.

TA
760 FHWA international scanning tour for
.F58 geotechnology, September-October 1992
1993 : soil nailing summary report / prepared by Dr. R. John Byrne ... [et al.]. -- Washington, D.C. : U.S. Dept. of Transportation, Federal Highway Administration, [1993]
ix, 45, 6, 25 p. : ill. ; 28 cm.
STRN: FHWA-PL-93-020

1. Roads--Embankments--Maintenance and repair. 2. Soil stabilization.

Rev-1 11-7-94 TLBAec

ROADS--GUARD FENCES.

HE
131 Roadside safety features and landscape
.I687r and environmental design. --
no.1418 Washington, D.C. : National Academy Press, 1993.
v, 133 p. : ill. ; 28 cm. --
(Transportation research record ; 1418)
ISBN 0-309-05567-8

1. Roads--Guard fences. 2. Roads--Safety measures. 3. Landscape architecture--Environmental aspects.

19 JUL 94 30415020 TLBAec

ROADS--LIGHTING--BREAK-AWAY SUPPORTS--COST EFFECTIVENESS.

TE
228 Cost-benefit procedure for evaluation
.C67 of utility corrective measures / prepared by Fazil T. Najafi ... [et
1993 al.]. -- [Gainesville] : University of Florida, Civil Engineering Dept. ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
ix, 167 p. : ill., maps ; 28 cm.
STRN: FL/DOT/RMC/0547/4104

Rev-1 11-8-94 TLBAec SEE NEXT CRD

ROADS--MAINTENANCE AND REPAIR--MANAGEMENT.

HE
131
.T687n
no.366

Reno, A. T. (Arlee T.)
Guidelines for effective maintenance-budgeting strategies / A.T. Reno and W.A. Hyman and M.E. Shaw. -- Washington, D.C. : National Academy Press, 1994.
39 p. : ill. ; 28 cm. -- (Report / National Cooperative Highway Research Program ; 366)
ISBN 0-309-05366-8

1. Roads--Maintenance and repair--Management. 2. Pavements--Maintenance and repair--Management.

Rev-1 11-18-84 TLBAsc 94-78145

ROADS--MAINTENANCE AND REPAIR--MANAGEMENT.

HE
131
.T687n
no.363

Role of highway maintenance in integrated management systems / M.J. Markow ... [et al.]. -- Washington, D.C. : National Academy Press, 1994.
9, 131 p. : ill. ; 28 cm. -- (Report / National Cooperative Highway Research Program ; 363)
ISBN 0-309-05361-7

1. Roads--Maintenance and repair--Management. 2. Pavements--Maintenance and repair--Management.

26 OCT 94 30795272 TLBAsc 94-60429

ROADS--RIGHT OF WAY.

HE
131
.T687sy
no.197

Malorana, John J.
Corridor preservation / John J. Malorana. -- Washington, D.C. : National Academy Press, 1994.
43 p. : ill. ; 28 cm. -- (Synthesis of highway practice ; 197)
ISBN 0-309-05652-7

1. Roads--Right of way.

26 OCT 94 31351840 TLBAsc

ROADS--SAFETY MEASURES--STANDARDS.

HE
131
.T687sy
no.202

Turner, Daniel S.
Severity indices for roadside features / Daniel S. Turner and Jerome W. Hall. -- Washington, D.C. : National Academy Press, 1994.
54 p. ; 28 cm. -- (Synthesis of highway practice ; 202)
ISBN 0-309-05657-8

1. Roads--Safety measures--Standards. 2. Roads--Safety measures--Evaluation. 3. Roadside improvements. 4. Crash injuries--Evaluation. 5. Cost effectiveness.

08 NOV 84 31351743 TLBAsc

ROADS--SNOW AND ICE CONTROL--OHIO.

ID
870
.Y36
E36
1982

Yang, Shang-Tian.
Economical evaluation of calcium magnesium acetate (CMA) production for road deicing / principal investigator: Shang-Tian Yang ; graduate research associate: Hui Zhu ; research associate: Ying Li. -- Columbus : Ohio State University, Dept. of Chemical Engineering ; Springfield, Va. : Available through the National Technical Information Service, 1982.
vi, 71 p. : ill. ; 28 cm.
STRN: FHWA/OH-84/003

1. Calcium magnesium acetate. 2. Roads--Snow and ice control--Ohio.

Rev-1 11-8-84 TLBAec

ROADS--TEXAS--RIGHT OF WAY.

HE
355.8
.R66
L42
1983

Roop, Stephen S.
Leasing of TxDOT's rights-of-way / by Stephen S. Roop and Sondip Mathur. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1983]
xiv, 105 p. : ill., forms ; 28 cm. -- (Research report ; 1329-1F)
STRN: FHWA/TX-83/1329-1F
1. Roads--Texas--Right of way. 2. Leases--Texas. 3. Express highways--Texas--Airspace utilization. 4. Roads--Right of way. 5. Express highways--Airspace utilization.

Rev-1 11-14-84 TLBAec

ROADSIDE IMPROVEMENT--TEXAS.

TE
178
.C66
1983

Controlling forest encroachment along East Texas roadways / by Robert E. Meyer ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1983]
xiii, 29 p. : ill. ; 28 cm. -- (Research report ; 802-8)
STRN: TX-84/802-8

1. Roadside improvement--Texas. 2. Herbicides--Texas--Testing. 3. Defoliants--Texas--Testing.

26 AUG 84 30880654 TLBAec

ROADSIDE REST AREAS--OHIO.

TE
178.8
.H38
B92
1984

Hazen, G. A. (Glenn A.)
Evaluation of solar energy facilities at rest areas in Ohio / principal investigators: Glenn A. Hazen, Shad M. Sargand ; graduate research assistants: Sebnem Emine Yahei, Lankajith C. Pannila. -- Athens : Ohio University, Dept. of Civil Engineering ; Springfield, Va. : Available through the National Technical Information Service, 1984.
ix, 140 p. : ill., map ; 28 cm.
STRN: FHWA/OH-84/007
1. Solar water heaters. 2. Roadside rest areas--Ohio. 3. Solar buildings--Ohio. 4. Solar heating.

Rev-1 11-8-84 TLBAec

ROUTE 9 (MASS.)

HE
356.5
.B75
C461
1987

Central Massachusetts Regional Planning Commission.
Route 9 corridor study : phase 2 working paper/ prepared by the Transportation and Community Development Staff of the Central Massachusetts Regional Planning Commission. -- Worcester, Mass. : The Commission, 1987.
1 v. : ill. ; 28 cm.

1. Route 9 (Mass.) 2. Roads--Massachusetts. 3. Traffic flow--Massachusetts.

16 NOV 94 18209423 TLBAsc

ROUTE 128 (MASS.)

HE
356.5
.B71
S35
1988

Sampson, Mary Kate.
Financing improvements to Route 128 on the North Shore / by Mary Kate Sampson. -- 1988.
1, 56 p. : map ; 28 cm.

1. Roads--Massachusetts--Boston Metropolitan Area--Finance. 2. Highway planning--Massachusetts--Boston Metropolitan Area. 3. Route 128 (Mass.)

Rev-1 11-2-94 TLBAsc

RUNWAYS (AERONAUTICS)--CONGRESSES.

TL
725.3
.R8
A42
1991

Aircraft/pavement interaction : an integrated system : proceedings of the conference / sponsored by the Airfield Pavement Committee, Air Transport Division, American Society of Civil Engineers ; co-sponsored by the U.S. Army Corps of Engineers [and] U.S. Air Force ; hosted by the Kansas City Section ASCE, Holiday Inn Crowne Plaza Hotel, Kansas City, Missouri, September 4-6, 1991 ; edited by Paul T. Foxworthy. -- New York, N.Y. : ASCE, c1991.
vi, 423 p. : ill. ; 22 cm.
ISBN 0-87262-819-1
1. Runways (Aeronautics)--Congresses. 2. Pavements --Congresses.

08 SEP 94 24218564 TLBAsc 91-26813

SCOUR AT BRIDGES.

HE
131
.T687r
no.1420

Hydrology, hydraulics, and water quality. -- Washington, D.C. : National Academy Press, 1993.
v, 83 p. : ill. ; 28 cm. -- (Transportation research record ; 1420)
ISBN 0-309-05568-7

1. Scour at bridges. 2. Hydraulic engineering.

19 JUL 94 30409415 TLBAsc

SOUTH BOSTON HAUL ROAD (BOSTON, MASS.)

Oversize
HE
378
.B71
T54sdf
1994

South Boston truck access and circulation study : technical traffic operations appendix / prepared for the Massachusetts Highway Department by Bechtel/Parsons Brinckerhoff. -- [Boston, Mass.] : Bechtel/Brinckerhoff, 1994.
2 v. ; 30 cm.

1. Central Artery (Boston, Mass.) 2. Third Harbor Tunnel (Boston, Mass.) 3. Interstate 90 (Mass.) 4. Tunnels--Massachusetts--Boston. 5. South Boston Haul Road (Boston, Mass.) 6. Road construction--Massachusetts--Boston.

Rev-1 11-16-94 TLBAsc

TANK CARS--SAFETY MEASURES.

HE
131
.T687s
no.243

Ensuring railroad tank car safety / Committee for a Study of the Railroad Tank Car Design Process, Transportation Research Board, National Research Council. -- Washington, D.C. : National Academy Press, 1994.
vii, 152 p. : ill. ; 24 cm. -- (Special report ; 243)
ISBN 0-309-05518-0

1. Tank cars--Safety measures.

08 NOV 94 30973813 TLBAsc 94-31803

TIRES, RUBBER--RECYCLING.

HE
131
.T687sy
no.198

Epps, Jon A.
Uses of recycled rubber tires in highways / Jon A. Epps. -- Washington, D.C. : National Academy Press, 1994.
162 p. : ill. ; 28 cm. -- (Synthesis of highway practice ; 198)
ISBN 0-309-05323-4

1. Tires, Rubber--Recycling. 2. Pavements, Asphalt. 3. Asphalt-rubber.

19 JUL 94 30719432 TLBAsc

TRAFFIC ESTIMATION--MATHEMATICAL MODELS.

HE
369
.S63
N48
1994

Spear, Bruce D.
New approaches to travel forecasting models : a synthesis of four research models : final report / Bruce D. Spear (John A. Volpe National Transportation Systems Center). -- Washington, D.C. : U.S. Dept. of Transportation : Distributed in cooperation with Technology Sharing Program, 1994.
[30] p. : ill. ; 28 cm.

1. Traffic estimation--Mathematical models. 2. Choice of transportation--Mathematical models. 3. Urban transportation--Mathematical models.

31 OCT 94 30364592 TLBAsc

TRAFFIC ESTIMATION--TEXAS.

HE
371
.I4
844
1991

Bell, Charles E. (Charles Earl), 1942-

Program documentation manual for the Texas trip distribution models / revised by Charles E. Bell and Jimmie D. Benson. -- College Station, Tex. : Texas Transporation Institute, 1991.
xi, 302 p. ; 28 cm. -- (Research report ; no. 947-5)

1. Traffic estimation--Texas. 2. Traffic surveys--Texas. 3. Traffic estimation--Computer programs--Handbooks, manuals, etc.

Rev-1 11-1-94 TLBAsc

TRAFFIC SIGNS AND SIGNALS.

HE
131
.T687r
no.1421

Traffic control devices, visibility, and traffic signal systems. -- Washington, D.C. : National Academy Press, 1993.
v, 112 p. : ill. ; 28 cm. -- (Transportation research record ; 1421)
ISBN 0-309-05574-1

1. Traffic signs and signals. 2. Traffic engineering. 3. Roads--Visibility. 4. Electronic traffic controls.

26 OCT 94 30499135 TLBAsc

TRAFFIC SIGNS AND SIGNALS--TEXAS--PSYCHOLOGICAL ASPECTS.

TE
228
.F74
1993

Freeway exit lane drops in Texas / by Kay Fitzpatrick ... [et al.]. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xx, 162, A-30 : ill. ; 28 cm. -- (Research report ; 1292-1F)
STRN: FHWA/TX-94/1292-1F

1. Traffic signs and signals--Texas--Psychological aspects. 2. Road markings--Texas--Psychological aspects. 3. Express highways--Texas--Communication systems.

20 SEP 94 31007878 TLBAsc

TRAFFIC VIOLATIONS--LAW AND LEGISLATION--MASSACHUSETTS.

A-V
KFM
2697
.M37
1994

Massachusetts motor vehicle offenses [sound recording]. -- Boston, MA : Massachusetts Continuing Legal Education, c1994.
2 sound cassettes.

1. Traffic violations--Law and legislation--Massachusetts. 2. Liability for traffic accidents--Massachusetts--Trial practice. 3. Automobile drivers' licenses--Massachusetts. 4. Trial Practice--Massachusetts.

02 NOV 94 31371727 TLBAsc

TRANSPORTATION--ENVIRONMENTAL ASPECTS--EUROPE.

EC
240.8
.A4
K34
1993

Kågeson, Per, 1947-
Getting the prices right : a European scheme for making transport pay its true costs / Per Kågeson. -- Stockholm : European Federation for Transport and Environment, 1993.
1 v. (various pagings) ; 25 cm.
ISBN 9155877214

1. Air--Pollution--Economic aspects--Europe. 2. Transportaton noise--Economic aspects--Europe. 3. Transportation--Environmental aspects--Europe. 4. Externalities (Economics)

20 SEP 94 29696634 TLBAsc

TRANSPORTATION--MASSACHUSETTS--BOSTON METROPOLITAN AREA--FINANCE--DIRECTORIES.

HE
356
.M4
T72
1989

Transportation programs : a guide for community officials in the metropolitan Boston region. -- [3rd rev. ed.]. -- [Boston, Mass.] : Metropolitan Planning Organization, [1989]
109 p. : ill., maps, forms ; 28 cm.
1. Transportation--Massachusetts--Boston Metropolitan Area--Finance--Directories. 2. Transportation--Massachusetts--Boston Metropolitan Area--Finance--Handbooks, manuals, etc. 3. Transportation and state--Massachusetts--Boston Metropolitan Area. 4. Federal aid to transportati on--Massachusetts--Boston Metrop olitan Area.

18 NOV 94 21814993 TLBAsc 90-624183

TRANSPORTATION--UNITED STATES.

HE
355
.F88
1990

Future federal surface transportation program : policy recommendations / Transportation Alternatives Group. -- Washington, DC : The Group, [1990]
25 p. ; 28 cm.

1. Transportation--United States.

19 JUL 94 21192069 TLBAsc

TRUCKING--UNITED STATES--DIRECTORIES.

REF.
HE
5623
.A4S
I78

IIS national motor carrier directory. -- New York, NY : Transportation Technical Services,
v. ; 28 cm.
Annual.
Began with 1990 ed.
LATEST YEAR ONLY.
Continues: National motor carrier directory.
ISSN 1061-477X = IIS national motor carrier directory

1. Trucking--United States--Directories. 2. Trucking--Canada--Directories.

20 JUL 94 25321286 TLBAsc 92-641757

TRUCKS--SPEED.

HE
5620
.S6
M53
1993

Middleton, D. R. (Dan R.)
Evaluation of sensors for monitoring truck speeds / by Dan R. Middleton. -- College Station, Tex. : Texas Transportation Institute, Texas A&M University System ; [Springfield, Va. : Available through the National Technical Information Service, 1993]
xi, 48 p. : ill. ; 28 cm. --
(Research report ; 1232-21)
STRN: FHWA/TX-93/1232-21

1. Trucks--Speed. 2. Piezoelectric devices--Evaluation. 3. Detectors--Evaluation. 4. Speed limits--Texas.

19 SEP 94 30757549 TLBAsc

UNION PACIFIC RAILROAD.

TJ
603.3
.U54
S73
1993

Stagner, Lloyd E., 1923-
Union Pacific motive power in transition, 1936-1960 / by Lloyd E. Stagner. -- 1st ed. -- David City, Neb. : South Platte Press, 1993.
64 p. : ill. ; 28 cm.
ISBN 0-942035-24-0

1. Locomotives--United States. 2. Union Pacific Railroad.

07 SEP 94 30311481 TLBAsc

UNITED STATES.
INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991.

HE
355.3
.F3
I88
1994

ISTEA Regional Roundtable report and action plan : a progress report from our customers. -- [Washington, D.C.] : U.S. Dept. of Transportation, Office of the Secretary, [1994]
iv, 53 p. : ill. ; 28 cm.

1. United States. Intermodal Surface Transportation Efficiency Act of 1991. 2. Transportation--United States--Planning.

Rev-1 11-2-94 TLBAsc

URBAN SOILS.

S
592.17
.U73
C73
1992

Craul, Phillip J., 1932-
Urban soil in landscape design / Phillip J. Craul. -- New York : Wiley, c1992.
xx, 396 p. : ill.; map ; 25 cm.
ISBN 0-471-80598-X (acid-free paper)

1. Urban soils. 2. Trees in cities.

03 OCT 94 24668998 TLBAsc 91-36557

URBAN TRANSPORTATION--MANAGEMENT.

HE
305
.O84
1994

Overview of travel demand management measures : final report / prepared by Comsis Corporation and the Institute of Transportation Engineers. -- Washington, D.C. : U.S. Dept. of Transportation : Distributed by Technology Sharing Program, U.S. Dept. of Transportation, 1994.
16 p. ; 28 cm.

1. Urban transportation--Management. 2. Urban transportation--Planning. 3. Traffic estimation.

04 OCT 94 30364583 TLBAsc

WASTE PRODUCTS AS ROAD MATERIALS.

HE
131
.T687sy
no.189

Collins, R. J. (Robert J.)
Recycling and use of waste materials and by-products in highway construction / Robert J. Collins and Stanley K. Ciesielski. -- Washington, D.C. : National Academy Press, 1994.
84 p. : ill. ; 28 cm. -- (Synthesis of highway practice / National Cooperative Highway Research Program, ISSN 0547-5570 ; 189)

1. Waste products as road materials. 2. Recycling (Waste, etc.)

08 NOV 94 31007341 TLBAsc

WOMEN AUTOMOBILE DRIVERS--UNITED STATES--STATISTICS.

HE
5614.2
.C47
F45
1994

Cerrelli, Ezio C.
Female drivers in fatal crashes : recent trends / [Ezio Cerrelli]. -- [Washington, D.C.] : National Highway Traffic Safety Administration ; [Springfield, Va. : Available through the National Technical Information Service, [1994]
1, 31, A6 p. : ill. ; 28 cm. --
(NHTSA technical report)

1. Women automobile drivers--United States--Statistics. 2. Traffic accidents--United States--Statistics. 3. Crash injuries--United States--Statistics.

Rev-1 10-21-94 TLBAsc 94-190811

Bus Ride
A FRIENDSHIP PUBLICATION
Vol. 30, No. 8 ISSN 0192 8902 November 1994

FEATURE ARTICLES

36 Arrow Coach and Houston Bigelow Bus Line combine for 50 years of success in Little Rock
39 Boston welcomes APTA Annual Meeting; special 'Speak Out' forum well received
42 The welcome mat is out for motorcoach tourism in Ozark Mountain Country
45 Bus Maintenance Forums scheduled for early 1995
46 Greyhound Lines names Craig Lentzsch as president
47 American Bus Marketplace set for December 4-9 in Fort Lauderdale
52 *George M. Smerk:* Remembrance of things passed
54 Dr. Richard: Diverse bus operations and other ventures are a prescription for success
59 'Key to the Future' provided by ABA
60 1994 Bus Photo Competition Winners
62 THE INSIDE SCOOP: A lineup of bus and coach interior component and accessory suppliers
66 Five years of fabulous fabrics: STI/Kings Plush looks for continued success in the bus and coach textile industry
68 METRA backs up its promises to customers in Columbus, Georgia
71 Expo Forum set for January 31
72 Jefferson Lines celebrates 75 years
76 Top Overall Graphics honors go to Peter Pan Bus Lines
78 Bonanza Small Bus Maintenance Forum
79 Bonanza Bus Maintenance Forum

Better Roads

EDITED EXCLUSIVELY FOR FEDERAL, STATE, COUNTY, TOWNSHIP, SPECIAL DISTRICT ROAD, AND MUNICIPAL STREET OFFICIALS AND ENGINEERS

VOLUME 64, NO. 11, NOVEMBER 1994

FEATURES

THE MYTHS AND THE TRUTH ABOUT STEEL BRIDGES *13*
Facts from the American Institute of Steel Construction provide an examination of myths and truths about steel bridge construction.

DESIGNING INTERCHANGE STRUCTURES WITH STEEL *14*
A *Better Roads* staff report on the use of steel for interchanges, including details about some specific projects and their costs.

CALTRANS LEARNS FROM QUAKE-DAMAGED STEEL BRIDGES *18*
A look at how well steel bridges withstood California's Northridge earthquake, including details about the investigations of specific projects.

HOW TO PROTECT WORKERS DURING LEAD PAINT REMOVAL *23*
This feature provides you with the basics you need to know in order to protect your crews when they must remove lead paint.

HOW TO SPECIFY POLYURETHANE BRIDGE COATINGS *26*
You can avoid lead by using modern coatings. This feature provides guidelines on specifying polyurethane bridge coatings

ANNUAL BRIDGE INVENTORY *28*
Better Roads' annual, exclusive report on the state of our bridges, state by state, including details about ratings.

TRANSPORTATION GIS SYSTEMS; WHAT'S REALLY INVOLVED? *29*
An honest look at what you'll encounter when you implement GIS.

RBAN GIS INTEGRATES PAVEMENT, INFRASTRUCTURE MANAGEMENT *33*
Zhanmin Zhang, Terry Dossey, Jose Weissmann, and W. Ronald Hudson discuss how GIS ties it all together in urban agencies..

NORTH DAKOTA EVALUATES GIS *36*
A look at the inner workings of the system installed by North Dakota's DOT.

CIVIL ENGINEERING
DECEMBER 1994 VOLUME 64 NUMBER 12

FOCUS ON GEOTECHNICAL ENGINEERING

JET GROUTING GAINS As a handful of projects demonstrate, jet grouting has gained a foothold in the U.S. after a rocky start in the early 1980s. *By Paul Tarricone* 40

PROTECTING A PIPELINE Building an oil pipeline across a forested mountain range in Colombia would have been extremely challenging—even without the threat of guerrilla attacks. *By D.H. Gray and M. Garcia-Lopez* 44

DSM SAVES THE DAM In what may be the first application of its kind, deep-soil mixing was used to protect an Ohio flood-control dam against potential seepage-induced failure. *By Andrew D. Walker* 48

SHORT AGGREGATE PIERS DEFEAT POOR SOILS Several case histories show the growing range of applications for short aggregate piers, also known as geopiers. *By Evert C. Lawton, Nathaniel S. Fox and Richard L. Handy* 52

GEOTECHNICAL BASELINE REPORTS Further refining the geotechnical design summary in contract documents could keep everyone out of court. *By Teresa Austin* 56

UNDER COVER Flexible membrane liners are the trend in landfill closure-cover systems, but clay liners make more sense for quake-threatened areas. *By Neno Duplancic* 70

FEATURES

GATEWAY TO COLUMBUS With an innovative twin-ribbed steel arch design, the $4 million Gateway Arch Bridge will provide a dramatic entrance to Columbus, Ind. *By Daniel K. Burroughs and John Hillman* 58

APPLYING SUSTAINABLE DEVELOPMENT Time-tested techniques help a new theory find its way into practice. *By Thomas E. Mitchell*

QUALITY ASSURANCE FOR HAZARDOUS-WASTE PROJECTS The rules are different from those for traditional design and construction projects. Here's how. *By N.S. Shashidhara* 66

ENGINEERING NEWS

Rock anchors keep road rock-steady ... cooling off with wastewater ... putting the wraps on cracked piles ... recycled tires ward off potholes ... a new use for impact-echo technology ... Connecticut's weekend wonder 11

CIVIL ENGINEERING
NOVEMBER 1994 VOLUME 64 NUMBER 11

FOCUS ON STRUCTURES

SPANNING THE GRAND CANYON The artistry of the past meets the design challenges of the present in a new Arizona bridge. *By Jerry A. Cannon and Robert D. Turton*

COLUMNLESS IN CHICAGO After 65 years in cramped Chicago Stadium, fans can now luxuriate in the spacious, column-free United Center. A long-span roof makes it possible. *By Daniel A. Cuoco, Udom Hungspruke and Robert P. DeScenza*

HISTORIC YORKTOWN: NEW BRIDGE KEEPS OLD DESIGN Widening the George P. Coleman Bridge in Virginia will preserve the structure's unique double-swing-span design. *By Michael J. Abrahams*

CIVILIAN STRUCTURES: TAKING THE DEFENSIVE Can we design cost-effective structural systems for public and private office buildings that mitigate the effects of a terrorist attack? *By Paul Weidlinger*

FISHY BUSINESS Is it possible for fish and hydroelectric facilities to share the nation's rivers peacefully? *By John Prendergast*

ENTER THE DRAGON A new train station in Taipei, Taiwan reflects a people's future and their past. *By Scott Danielson*

SPACE-FRAME PYRAMID A new athletic facility at California State University, Long Beach is the biggest space-frame pyramid in the world—and cheaper than a design featuring conventional framing. *By Tejav J. DeGanyar, Michael D. Griffin and Michael R. Patterson*

FEATURES

SPOILS OF WAR A meticulous game plan spelled success in remediation of an obsolete armaments research site. *By Richard S. Skryness, Karl Swenson and William Pananos*

FOCUSING ON FATIGUE Guidelines for repairing steel bridge components that show fatigue damage. *By Peter B. Keating*

COMPUTER CONTROL OF CSOS In a $120 million project, real-time monitoring and the control of pumping stations and sluice gates are being used to handle combined sewer overflows in St. Louis. *By Russell W. Batzel*

ENGINEERING NEWS

Privatized transportation in Washington state ... a victory for epoxy-coated rebar ... raising the roof on the St. Louis Convention Center ... rehabbing retaining walls ... bridge-swapping in Michigan

CIVIL ENGINEERING PRACTICE™ • JOURNAL OF THE BOSTON SOCIETY OF CIVIL ENGINEERS SECTION ASCE

The Scope of the Boston Harbor Project — DOMINIQUE N. BROCARD — 5
Few projects of its type have the scale of this massive undertaking, nor have past ventures had to contend with as many complicating circumstances.

A Perspective: The Boston Harbor Project — DOUGLAS B. MACDONALD — 7
Even though the extraordinary efforts of many people are now being applied to the problem of cleaning up Boston Harbor, there are many more challenges to meet in the future.

The Boston Harbor Project: History & Planning — CHERYL BREEN, JEKABS VITTANDS & DANIEL O'BRIEN — 11
Plans to regulate water quality in Boston Harbor historically have been complicated by numerous factors, not the least of which is institutional management.

The New Boston Outfall — DOMINIQUE N. BROCARD, BRIAN J. VAN WHEELE & LAWRENCE A. WILLIAMSON — 33
Consisting of a 9.5-mile tunnel with a 6,600-foot diffuser and 55 risers, the outfall is designed to minimize adverse environmental impacts at the lowest cost and with maximum dependability.

Design of the Deer Island Treatment Plant — JOHN A. LAGER, DAVID P. BOVA, ROBERT M. OTOSKI & GERARD L. GALLINARO — 49
Confined space, meeting effluent quality goals, maintaining existing plant operations and providing a cost-effective facility while keeping to a strict schedule can complicate design.

Managing the Boston Harbor Project — CHARLES BUTTON, KEN M. WILLIS & CRYSTAL GANDRUD — 67
A "modular" approach is one key to managing a large-scale project with a wide range of impacts that is conducted under severe time, siting and budget constraints.

Financing the Boston Harbor Project — PAUL F. LEVY — 77
An aggressive financial program that includes a series of credit mechanisms to provide investor security is the key to financing such a massive engineering task.

Combined Sewer Overflow Abatement in Boston Harbor — DAVID R. BINGHAM, CHERYL A. BREEN, MICHAEL COLLINS & LISE MARX — 83
The best plan to control combined sewer overflows is the one that is integrated with overall system-wide collection and wastewater treatment activities.

Article Index 1986–1994 — 107
Advertisers' Index — 120

ENR CONTENTS — November 21, 1994 • Vol. 233 No. 21

NEWS

16 Trains start Channel Tunnel service
30 Deck uses 50% less steel

BUILDINGS
13 Work resumes after stairwell collapse
26 Precision job upgrades hospital
28 Chicago developing facade repair code
29 Disney plans up, down like roller coasters
34 'Gem' of an old church gets new bell towers and custom-cast bells

BUSINESS
15 Canada scores big in China
17 Three suits accuse carriers of overcharging
33 Tokyo office closing stirs Austin Co. critics

WATER AND POWER
15 British government aid loan ruled illegal
21 Photovoltaic station would set new marks
22 Renewables are major shift for Ontario Hydro
24 Virginia powerplant overcomes barriers

ENR CONTENTS — December 5, 1994 • Vol. 233 No. 23

NEWS

COMPANIES
13 Contractors report more work but lower profits
14 Alliance aims to gain water work worldwide
22 Mexican firms' share prices slip

ENVIRONMENT
9 California list of water proposals lengthens
15 U.S. team on Ukraine missile job
16 Army says Tooele is safe

BUILDINGS
20 Design change nips permit
20 Condo units float to new site on both oil and water
21 Hoping to avoid others' mistakes
23 Disk to shield soccer fans

EARTHQUAKES
10 No weld strengthening required
10 Design approach in flux
11 Draft report calls for seismic safety czar

TRANSPORTATION
26 San Francisco seeks a personal CM touch for airport

Eno's
TRANSPORTATION
Quarterly
Autumn 1994

Editorial 329

Letter to the Editor 331

Toward a National Intermodal Transportation System 333
ROBERT D. KREBS

Intermodalism: An Eno Forum 343

Amtrak's Future: A *TQ* Interview with Thomas M. Downs .. 355

International Aviation Policies: Time for Change? 367
GAIL F. BUTLER and MARTIN R. KELLER

Ground Access to Airports: Prospects for Intermodalism 381
ANNALYNN LACOMBE

Airport Privatization: Procedures and Methods 393
MEHDI HARIRIAN and BIJAN VASIGH

High-Speed Raid in Texas: Its Rise and Fall 403
JOHN S. ROBEY

Health Care Costs and Transportation 423
STEPHEN LUCHTER

Identifying Markets for Contract Logistics Services 431
GRANT M. DAVIS and WILLIAM A. CUNNINGHAM

GIS WORLD
VOL. 7 NO. 12 The World's Leading Geographic Information Systems Publication DECEMBER 1994

FEATURES

22 FGT Conference Benefits Government Geospatial Technology Community

36 Virtual Worlds Capture Spatial Reality
By Robert Jacobson

40 1995 GIS Industry Outlook: Hardware and Peripherals

48 A Call for GIS Certification
By Lawrence F. Ayers and Clifford A. Kottman

54 Re-engineering Efforts Enhance Information Access
By Ginger M. Juhl

57 Spreadsheet Mapping: Two New Products
By Thomas N. Yoder

Dec 1994

Railway Gazette

INTERNATIONAL

CONTENTS

VOLUME 150 NUMBER 12
DECEMBER 1994

'RAILWAYS MUST ACCELERATE THE REFORMS' 795
Russian Minister of Railways Guennadij Fadeyev reveals to Murray Hughes in an interview in Moscow that operations on the 86 000 km RZD network remain stable despite the erratic course of the Russian economy. A recruitment ban and early retirement are helping with cost this year, but cost savings are in the future will be more painful. Domestic production of rolling stock will preserve scarce foreign currency

PRIVATE SECTOR TO HELP BUILD RUSSIA'S FIRST HIGH SPEED LINE 799
Interviewed by Murray Hughes in St Petersburg, Director General of the Russian High Speed Railway Shareholding Company RAO VSM Alexei Bolshakov said that rapid progress was being made with plans to have the St Petersburg – Melnikovo section of the future high speed line to Moscow open by 1997

Railway Gazette in РОССИЯ

HIGH SPEED ONCE A WEEK 803

RESEARCH RETAINS HIGH PRIORITY AT INSTITUTE 803

MOSCOW PROTOTYPES ON TEST AT SHCHERBINKA 804
A five-car N5 series trainset developed for the Moscow metro by Avtovaz has undergone an extensive series of trials at the All-Russian Railway Research Institute's Shcherbinka test centre

TURKS PREPARE LONG-TERM DEVELOPMENT STRATEGY
Though the Suncan – Anfive cut off has stalled, Andrew Hellawell found that progress is being made and the outlook is optimistic

LIMITED RESOURCES STRETCHED TO THE FULL ON TCDD 807

EXPANSION STILL MINISTRY'S LONG TERM AIM 808

METRO PROJECTS IN ANKARA AND ISTANBUL GAIN MOMENTUM 809

OPERATING IN AN INSECURE WORLD 813
Roger Ford investigates measures operators are using to make railways less vulnerable to lawless behaviour

ABB DELIVERS FIRST LEASE-FINANCED NETWORKER EXPRESS 817

ACTIVE BUMP-STOP BOOSTS RIDE QUALITY 818

PRODUCT NEWS 819

DIARY 820

PUBLICATIONS 820

Now 1994

Railway Gazette

INTERNATIONAL

CONTENTS

VOLUME 150 NUMBER 11
NOVEMBER 1994

RAILWAY GAZETTE INTERNATIONAL
Quadrant House, Sutton
Surrey, SM2 5AS, Great Britain
FAX +44 81 652 3738
TELEX 892084 REEDBP G

EDITOR
Murray Hughes BA
Phone: +44 81 652 3056

DEPUTY EDITOR
Chris Jackson BSC MCIT
+44 81 652 3743

ASSISTANT EDITOR
Andrew Hellawell MA
+44 81 652 3741

CONSULTANT EDITOR
Richard Hope OBE CEng MIEE MIMechE
+44 81 652 3740

EDITORIAL ADMINISTRATION
Gordon Wiseman
+44 81 652 3739

ADVERTISEMENT MANAGER
Sheena Rennie
+44 81 652 3278

ASSISTANT ADVERTISEMENT MANAGER

FIRST WORLD CONGRESS ON RAILWAY RESEARCH 707

JR WEST RESEARCH LEADS TO SERIES 500 ORDER 707

VR OFFERS 3-D SIMULATION IN DESIGN AND PLANNING 735
Virtual Reality Modelling software can be applied by rail planners to training, simulation, fire safety, exit analysis, design and configuration planning

RHAPSODY IN BLUE TO BOOST OVERNIGHT TRAVEL 743
DACH Hotelzug AG hopes its City-NightLine international hotel trains on the Zurich – Wien and Köln – Wien routes can win back market share and generate new business

PRIVATE FINANCE INITIATIVE FACES STIFF TEST ON WCML 749
WCML Development Co Ltd's Project Director Tony Cruddas explained to Richard Hope how a £600m upgrade of Britain's West Coast Main Line might be funded

ET94 PREVIEW 755

PRODUCT NEWS 759

DIARY 762

PUBLICATIONS 762

Light rail expansion hangs on funding

FUNDING DILEMMA DICTATES THE PACE OF GROWTH 711
Julian Wolinsky considers that the frenetic activity of US light rail in the early 1990s cannot be sustained unless fresh finance sources are found

KARLSRUHE TRAMS CROSS MORE CITY BOUNDARIES 719
The successful launch in 1992 of light rail services linking Karlsruhe city centre with outlying towns over DB tracks led to conversion of four more routes in May this year. Further expansion is planned for 1996

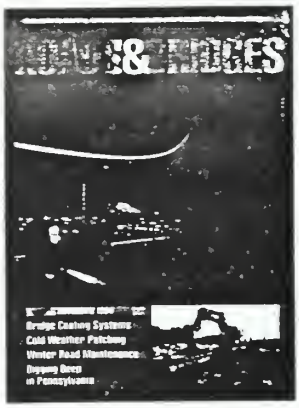
LIGHT RAIL LINE-UP AWAITS FUNDING DECISIONS 725
Powers now exist for a further 183 km of light rail lines in five British cities. Plans for many more are maturing, but progress will be slow while government funding is pegged at £50m a year

SHEFFIELD DRAWS LIGHT RAIL CONFERENCE 730

Also in this issue:
Passenger Portfolio
Service • Marketing
Design • Management
for passenger railways worldwide

ROADS&BRIDGES

Dedicated to the Construction, Rebuilding and Maintenance of the Nation's Dynamic Transportation Infrastructure



In This Issue

In November's issue you'll find articles on **winter road maintenance**, including **materials for cold-weather patching**. Articles on high-tech **bridge coating systems** also are featured, along with a story on **high-volume earthmoving** in Pennsylvania.

Cover: Tacoma Narrows Bridge at Tacoma, Wash., with Mt. Ranier, by Tim J. Johnson for Wasser High-Tech Coatings, Inc.; cold-weather patching, courtesy Percol; and Hitachi EX1800 excavator at work in eastern Pennsylvania, courtesy Geupel Construction.

VOL. 32/NO.11 NOVEMBER 1994

FEATURES

28 PMS pumps up California county's roadway condition
Over 12-year period, pavement management system helps Orange County, Calif., improve roadway conditions; **story appears in regional editions only**

30 Moisture-cure urethane coatings work in cold, wet weather
Washington State DOT uses moisture-cure polyurethane coatings on high-traffic bridges under salt spray and cold, damp conditions; quick recoat times a plus for contractor

32 Cold-applied emulsion crackfiller gains 'seal' of approval from users
Our bimonthly department, Pavement Maintenance & Management '94 looks at cold weather patching and maintenance for pavements

35 Alliance launches 'zero velocity' spreading to winter maintenance
Our spotlight on Winter Road Maintenance also includes a roundup of snow and ice control equipment and materials

38 Massive excavators, haul trucks replace loaders in road project
Lackawanna Valley Industrial Highway project in eastern Pennsylvania requires extensive earthmoving; contractor speeds work by using big backhoe with 13.5 cu yd bucket

40 Two-coat coating system keeps Peace Bridge in pink
U.S.–Canadian bridge authority recoats Peace Bridge using innovative coatings management services concept, and two-coat coating system

SEPTEMBER–OCTOBER 1994 NUMBER 174

TR NEWS

2 Critical Issues in Transportation

11 A Paradigm for Addressing Change in the Transportation Environment

14 Demonstrating Innovative Concrete Pavement Concepts in Michigan

19 Transportation Outlook
TRB's Field Visit Program, 1993–1994

30 Using Peak-Period Tolls To Curb Gridlock
Report Findings

31 New Executive Director of the Transportation Research Board

32 Research Pays Off
Public/Private Partnership Beneficial for Truck Research

34 Profiles
36 News Briefs
42 TRB Highlights
CRP News, 42
43 Calendar
46 Bookshelf
New TRB Publications, 46

State Transportation Library
Borrower's Request Form

To request materials from this acquisitions list for a 4-week loan period (2 weeks for audio or video tapes), fill in the necessary information and return this form to the **Transportation Library, 2nd floor, 10 Park Plaza, Boston, MA 02116.**

Check the method of delivery you would prefer

Interoffice Mail_____ **Pick-up at Library**_____ **Fax**_____
(INCLUDE # BELOW)

Name:_____

Agency:_____

Address:_____

Telephone & Fax:_____

List the Call Number(s) and/or Title(s) for the item(s) you want (see examples)

1. **Ex. HE 131.T687r No.1343 Rockfall Prediction and Control and Landslide Case Histories**
2. **Ex. Transportation Journal, Spring 93 "Private Fleet Use: A Transaction Cost Model"**
3.
4.
5.
6.

STATE TRANSPORTATION BUILDING
10 PARK PLAZA
BOSTON, MA 02116

...The Alternate Route.

JAN 10'95
MA
PB METER 7008230
0.78
U.S. POSTAGE

Leonard Adams-Gov. Docs.
University Library
Univ. of Mass.
Amherst, MA 01003

7743 017

JAN 10 95

ACME
BOOKBINDING CO., INC.

SEP 1 1996

100 CAMBRIDGE STREET
CHARLESTOWN, MASS.